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THE CHANGING RESPECTABILITY OF ANOMALY: A CASE STUDY

by

© Bart Eisen

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

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DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

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FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "The Changing Respectability of Anomaly: A Case Study" submitted by Bart Eisen in partial fulfilment of the requirements for the degree of Master of Education.

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Date. March 23/72

ABSTRACT

The controversial topic of parapsychology is viewed within the Soviet context as an example of the dynamic interaction of an anomaly with an established tradition.

The acceptability of the subject of parapsychology as a legitimate area of study in the U.S.S.R. is traced within an historical perspective. The official and academic attitude toward parapsychology in the U.S.S.R. is seen to have vacilated from tolerance (prerevolution to 1938), to rejection (1938 to 1959), to limited but expanding acceptance (post-1959). The continuing research in parapsychology is seen to reflect the basic principles of the prevailing materialistic concepts as well as methodological traits similar to those of other contemporary areas of study (particularly psychology) in the U.S.S.R. In terms of approach to the problem, philosophical perspective, emphasis on application and research methodology, Soviet parapsychologists have complied with the standards of other contemporary Soviet sciences and differed in many respects from Western parapsychologists.

The analysis suggests that, the phenomena of acceptance of parapsychology in the U.S.S.R. can be viewed as a case study in the confrontation of anomalous material with an existing paradigm. The inquiry is primarily dependent on a model for the treatment of anomalous material which is developed. Using the model which is based to a large extent on the views of T. S. Kuhn, the problem of acceptance of parapsychology is investigated in two spheres: (1) the political (state) attitude, and (2) the attitude of the academic community. Elaborating the incompatability of the underlying assumptions of Soviet parapsychology with the basic tenets of both political and academic (specifically Soviet

psychology) frameworks in the U.S.S.R., conclusions can be drawn concerning the dynamics of the interaction.

Parapsychology's struggle for acceptability in the Soviet scientific community appears to be advancing rapidly with respect to certain subject matter. Partial acceptance at the political level has been a tremendous asset. However, resistance is still evident and is expected to continue. It is suggested that not all subject matter considered parapsychological in the West can be assimilated in the present Soviet "Weltanschaung" without fundamental changes in the established ideological and scientific traditions. Resolution of the confrontation would appear to exist in the verification of a larger more encompassing framework - an alternative paradigm.

Viewed as a phototype for more in depth analysis of scientific controversy centering on anomalous material, the study may stimulate continued investigation. Further research requiring greater refinement is encouraged.

The Science of today is a light matter ... Those amazing truths that our descendants will discover are even now all around us, staring us in the eyes, so to speak; and yet we do not see them. But it is not enough to say that we do not see them; we do not wish to see them - for as soon as an unexpected and unfamiliar fact appears, we try to fit it into the framework of the commonplaces of accepted knowledge, and are indignant that anyone should dare to experiment further.

- Charles Robert Richet

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CHAPTER I

INTRODUCTION

The subject matter included under the heading of parapsychology[1] is controversial in psychology and science. Much discussion has appeared in the literature concerning the "facts", and "nonfacts", the pros and cons, the possibilities and nonpossibilities of the various aspects of parapsychological investigations. Arduous debates in academic symposia (Murchison, 1927) and lengthy discussions (Smythies, 1967) have been spawned. Involved in the controversy are eminent scholars and prominent academics. Highly respected men in the past and present have offered encouragement to parapsychological research. Nobel Prize winners Charles Richet, Lord Rayleigh, T. T. Thomson and Sir John Eccles, among other well known names such as William James, Sigmund Freud, Carl Jung, William McDougall, Cyril Burt and Gardner Murphy have contributed support to psychical research (see Van Over, 1972). Other noteable figures such as Helmholtz, Joseph Jastrow, C. E. Kellogg, D. H. Rawcliffe, B. F. Skinner, S. S. Stevens and Edwin Boring have raised their voices and pens against parapsychology. Whether pro or con a great number of prominent names are associated with the apparently widening sphere of controversy that envelopes parapsychology.

Interest in aspects of psychical phenomena dates back long before Edward Titchner discussed the feeling of being stared at in the reputable journal, Science, in 1898. Phenomena that parapsychologists

interpret as "supernormal" or beyond the grasp of the known laws of science were reported already in classical antiquity (Dodds, 1971). Psychic experiences have been compiled from almost all ages of recorded history (Ebon, 1971). Organized research, however, did not begin in many parts of the world until the eighteen hundreds. The second half of the nineteenth century saw a considerable interest in such psychic phenomena as, telepathy, clairvoyance, precognition, levitation, slate writing, spirit communication, spirit materialization, and spirit photography (Kottler, 1974). Perhaps the best summary of the early beginnings of serious psychical investigation in the United States and Great Britain is offered by Gauld (1968). Gauld traces the path of parapsychology from its roots in spiritualism of the mid-1800's to the foundation of the Society for Psychical Research in London in 1882 and its sister organization in the United States, The American Society for Psychical Research in 1885. Since that time publications concerning parapsychology have increased yearly until they now number in the thousands.[2]

The interest in psychical phenomena is transcultural, with organizations for parapsychical research established on all major continents.[3] The geographical spread of interest in organized research of "psi" events is indicated in Parapsychology Today: A Geographic View (Proceedings of an International Conference Held at Le Piol, St. Paul de Vence, France, August 25-27, 1971) (Angoff & Shapin, 1973). The book presents articles on parapsychology in the United Kingdom, Japan, India, Turkey, Israel, Germany, Eastern Europe and the U.S.S.R., South Africa, Nordic Countries of Europe, Switzerland, Argentina, Holland,

Italy, France, Canada, and the United States.

The appearance of the U.S.S.R. on this list is quite outstanding and perhaps somewhat surprising since the philosophical stance of dialectic materialism prefers not to deal with phenomena that cannot be explained by current states of knowledge (Wetter, 1962). In 1954 the Large Soviet Encyclopedia (Bolshaya Sovetskaya Entsiklopediya, 2nd Ed., Vol. XLII, 1956, p.159) described telepathy as:

> ...an antiscientific, idealistic fiction concerning man's supernatural faculty of perceiving phenomena which in respect of place and time are incapable of perception, and the possibility of transmitting thoughts over distances without the agency of sense organs and a physical medium (cited by Teodorovich, 1967, p.16).

With such a definition it would not be expected that the U.S.S.R. would be involved in parapsychological research.

Less is known about the contemporary status of parapsychology in the U.S.S.R. than any other geographical area. Little information is published about parapsychological events in the Soviet Union. Before 1970 minimal interest was shown in Soviet parapsychology by the West. This situation was altered to a degree with the publication of Psychic Discoveries Behind the Iron Curtain by Sheila Ostrander and Lynn Schroeder (1970). This popularized account of parapsychology in the U.S.S.R. stimulated much activity both within and without parapsychological circles as Van de Castle (1970) predicted. Noteable American and European researchers travelled to the Soviet to confirm Ostrander's and Schroeder's report (see for example, Moss, 1971; Ullman, 1971). Experimental projects elaborated in the book were in turn carried out in the United States. In this way the attention of the Western world

was focused on Kirlian photography which has been taken up by Dr. Thelma Moss (Moss, 1971, 1972; Moss & Johnson, 1972).

The Ostrander and Schroeder book and the response to it suggests that there is much disagreement concerning the state of affairs of parapsychology in the U.S.S.R., suggesting two points: (1) There is little agreement among Western Parapsychologists on the degree of acceptability of parapsychology in the U.S.S.R.; (2) The development of parapsychology in the U.S.S.R. may be unique by virtue of its sudden emergence in the early 1960's. Rapid acceptance by the Soviets is unique for two reasons: (a) The history of parapsychology in other countries is one of gradual acceptance; (b) A common pattern of conflict between anomolous material and an existing paradigm suggests a long process of gradually diminishing resistance. It is with these two points in mind that the present study was undertaken. The confusion concerning parapsychological activity in the U.S.S.R. must be clarified. To what extent is parapsychology acceptable for Soviet research? How is such research justified within the philosophical framework of dialectical materialism? With regard to parapsychology in the Soviet Union, what insights can be gained concerning the confrontation of a new body of knowledge with an established body of knowledge? Answers to the first two questions have given rise to widely varying reports and no one to my knowledge has attempted to answer the third. As one researcher writes:

> The fact that a stirring of scientific interest in ESP has occurred at all where it was so unexpected would even by itself be a matter of major importance (Pratt, 1973, p.56).

Scope of the Study

The study is intended to meet three general objectives:

1. To trace the growing acceptance (or nonacceptance) of parapsychology as a legitimate area of study within an historical perspective.
2. To examine some of the factors involved in the acceptance (or nonacceptance) of parapsychology in the U.S.S.R.
3. To view parapsychology in the U.S.S.R. as a case study of the confrontation of anomalous material with an existing paradigm.

Limitations

The interpretations which may be extracted from this thesis are limited.

It will be possible to obtain a comprehensive overview of the growing acceptance of parapsychology in the U.S.S.R. and to elaborate on the reasons for this evolution. It will be possible to determine some current trends in the growth of parapsychology in the U.S.S.R. And, in a more general way, it will be possible to gain some insight into the confrontation of anomolous material with an existing paradigm.

However, it will <u>not</u> be possible from this study to gain an extremely accurate picture of the current state of affairs of parapsychological research in the U.S.S.R. While certain trends and attitudes are distinguishable with respect to psi research in the U.S.S.R., these should not be construed as being totally comprehensive nor reflective of the 1975 situation.

Several problems which confront this study and at the same time impose limits on the investigation derive from the peculiarities of the

topic. The topic concerns a geographical area and languages that are foreign to the author; each of which contributes to the difficulty in obtaining relevant information. Several other points should be mentioned concerning problems related to investigating parapsychology in the U.S.S.R. First, little Soviet research on parapsychology has been translated into English. This is due to several reasons: (1) obtaining English translations of Soviet technical papers in any field of study is difficult and parapsychology by no means is high on the list of priorities for translation; (2) parapsychology in the U.S.S.R. does not have its own journal and, therefore, the articles are scattered about and difficult to collect for translation by interested Western parapsychologists; (3) the few English translations of Soviet articles, to some degree, reflect the Western academic bias against parapsychological research.

An additional reason is that Soviet work translated into English often suffers greatly in the translation. Brozek (1961) points out that

> Unique and unexpected difficulties in communication and in translation may arise when a Russian and an international word are used which in English would be rendered by similar or identical words but which have totally different connotations in Russian (p.714).

Similarly, referring to the intercultural problems in semantics that hinder communications, Brackbill (1960) questions,

> What's wrong with Soviet-American communication that I had to come all the way to Moscow to find out that Soviet experimental child research is both competently done and of considerable interest to me (p.232)?

The same intercultural translation and communications problem

applies to parapsychological research. Not only do normal translation problems hinder an accurate English rendition of Soviet work but the matter is complicated by terminological differences between Soviet and Western parapsychology. The translater must adopt a new vocabulary, a task made even more difficult by the absence of Russian dictionaries of parapsychological terms. Hopefully, these problems can be minimized in the future with effort and new insights.[4]

Thirdly, it may be that a complete picture of parapsychological research is not possible even within the U.S.S.R. There are persistent rumors that much of the research is carried on in secret (Ostrander & Schroeder, 1971, p.13; Canadian Magazine, March 16, 1974, p.12). As Ryzl (1969) points out

> The Soviet authorities have the financial means and apparently a pool of qualified and compliant researchers to accelerate considerably, whenever the state so desires, any program in parapsychological research. But the U.S.S.R. also has the means to keep the results of such research secret from the rest of the world. Once practical application of these results becomes possible, there is no doubt that the Soviet Union will do so (p.274-275).

Information release in the area of parapsychology appears to be closely checked in the U.S.S.R. Dr. Thelma Moss of the University of California reports that on a visit to Professor Vladimir Inyushin and his colleagues at Kazakh University in Alma-Ata, she was told that she could not see his laboratory since permission had not come from Moscow (Moss, 1971, p.43). Ryzl (1968) suggests even more strongly that:

> ...there are convincing indications that in the U.S.S.R. some secret research, associated with state security and defense, is going on; that is, that attempts are being made to apply ESP to both police and military use (p.265).

Sources of Information

Sources providing the main body of data for this study can be divided into two main categories: (1) translations of publications from the U.S.S.R. and (2) English language surveys, reports, papers, symposia and communications.

Information was obtained directly from the appropriate parapsychological organizations and publishers or was obtained through the Interlibrary Loan Service at the University of Alberta.

Historical Context of the Problem of "Acceptability"

Parapsychological phenomena and their investigation have had a history of scientific rejection since the 17th century. Before the 17th century explanations in terms of occult qualities were common in acceptable scientific work. However, men such as Boyle, and later Newton, altered this situation and commited science to explanations in terms of mechanico-corpuscular models. This method of viewing nature suggested solutions to problems that previously evaded acceptable solutions (Boas, 1952). Parapsychological data which appear to conflict with these basic assumptions have continually been rejected by the scientific community since that time. However, the degree to which the tacit assumptions made in traditional science, and the belief in psychical phenomena are incommensurate is uncertain.

The controversy over psi phenomena has raged in North America, Europe, as well as the Soviet Union for some time, with experimental research being conducted in most technological countries. Much of this accumulated work suggests the existence of phenomena such as ESP, PK, and related phenomena. However, these phenomena do not seem

to fit the world view held by most scientists, resulting in a noticeable distinction between "pro" and "anti" parapsychology. On the one hand, parapsychologists claim that their case is well established, that the evidence speaks for itself and that no more time should be spent compiling additional evidence. Instead, efforts should be made to investigate the variables that determine the phenomena; to control the phenomena; to establish a working model for its mechanism; and to develop a contemporary scientific framework in which such phenomena can take their rightful place. On the other hand, many scientists find such hypotheses unacceptable and prefer to believe that alternative hypotheses, experimental weakness, or fraud and colusion, rather than ESP or PK, best explain certain findings. This conflict is presently unresolved.

One thing is clear however, more scientists are taking an interest and are taking a stance in this controversy. As the publication of parapsychological papers increases and as it becomes the focus of increased discussion, more members of the scientific community are required to choose a side in the controversy or find some other suitable solution.

Depth of the Controversy

The depth of the controversy is generally recognized by those pro and those anti psi research. Parapsychological phenomena belong to a class of events that do not easily fit into systematic science and the prevailing view of nature encouraged by empiricism. Instead, they appear to contradict established concepts, views and theories concerning the World. For example, some psychic phenomena appear to be unexplainable

within present physicalistic frameworks (Rhine & Pratt, 1957, p.66). Precognition, clairvoyance, telepathy and psychokinesis by definition occur under conditions that eliminate the types of operation known as physical. Professor C. D. Broad has shown that parapsychological phenomena clash sharply with certain tacit assumptions which he has termed 'basic limiting principles'; that is principles "we hesitatingly take for granted as the framework within which all our practical activities and our scientific theories are confined" (cited by Ducasse, 1954, p.811).

The class of phenomena called "psi" is an anomaly to the popular conceptions of space and time. Psi shows no discernible relation to space. Spontaneous occurrences and experimental examinations suggest that telepathy between agent and percipient is unhampered by the distance between them. No known physical medium accounts for this contradiction to existing concepts of space. Psi ignores traditional temporal relations as it does spatial relations. Precognition, the prediction of random, future events, is by its definition transtemporal. According to C. E. M. Hansel, if the claims of parapsychologists are justified, "a complete revision in contemporary scientific thought is required at least comparable to that made necessary in Biology by Darwin and in Physics by Einstein" (Hansel, 1966, p.8-9). This widely held view is clearly expressed in an editorial in Science on "Extra-sensory Perception" which suggests that parapsychologists have presented "'facts' incompatible with accepted scientific principles and their vast body of supporting evidence" (p.7).

PART I

DEVELOPMENT OF PARAPSYCHOLOGY IN THE U.S.S.R.

CHAPTER II

HISTORICAL DEVELOPMENTS LEADING TO THE ACCEPTANCE OF PARAPSYCHOLOGY IN THE U.S.S.R.

A historical perspective is essential in order to gain insights into (1) how acceptable parapsychology is in the U.S.S.R., (2) the problems involved in the acceptance of parapsychology in the U.S.S.R., (3) some of the factors that determine acceptance or rejection of parapsychology in the U.S.S.R., and (4) the relationship between anomalous material and an existing paradigm. A brief historical sketch of parapsychology in the U.S.S.R. is here presented; though concerned primarily with Russia it will occasionally mention East European developments, differences and parallels. Emphasis is placed on recent developments and research in parapsychology as opposed to early developments and research. (Early historical data is offered by Vasiliev, 1963, 1965.)

Few historical reviews outline the exact nature of parapsychological research in the U.S.S.R.; most publications are incomplete, such as those compiled by Pratt (1963, 1973), Vasiliev (1963), Naumov (1968), and Mutschall (1968). Others are outdated (Ryal, 1961; Banerjee, 1962; Teodorovich, 1967), or written for popular appeal (Ostrander & Schroeder, 1970). Some reviews contain information about parapsychological

activities in East European countries (Ryzl, 1968, 1969, 1971). Parapsychology in Poland is reviewed by Borzymowski (1962), in Bulgaria by Ostrander and Schroeder (1970, p.265-309), in Czechoslovakia by Pratt (1963, 1966, 1973), and Ostrander and Schroeder (1970, p.313-399).

Period of Official Tolerance

Parapsychological phenomena first appears to have drawn academic interest in the middle 1800's (Platanov, 1965). This parallels early developments in psi research in other parts of the world (Gauld, 1968; Kottler, 1974). From these early times until the late 1930's such puzzling phenomena as spirit communications, spirit materializations, levitation, spirit rapping and other such phenomena associated with spiritual mediums were studied with curiosity by select groups among the scientific and academic community. Often high ranking members of these prestigious communities were involved in these investigations of purported psychic phenomena.

Throughout this early period when such investigations were tolerated, two distinct stages of investigation can be isolated. Prior to the Russian Revolution which initiated the communist regime, the primary focus of studies lay on the seance rooms and mediums themselves. After the revolution, however, efforts were made to apply experimental and associated laboratory techniques. An outstanding figure associated with the shift in approach to the scientific problem of psi phenomena is Bechterev. It is therefore suggested that the "period of tolerance" is comprised of two distinct, yet interrelated, segments of historical development: the prerevolutionary period and the period of Bechterev's

dominant influence.

Pre-Revolutionary Period

As with most modern civilizations, Russia maintains historical roots in pre-Christian and pre-Moslem magical traditions. In pre-revolutionary Russia, elements of mysticism permeated the practices of the Orthodox Church. This cultural milieu allowed for an active interest in what was then known as spiritualistic phenomena. Mediumships and seances were very popular. In 1912 there were some 2,000 officially registered spiritistic circles in Russia[6] (Vasiliev, 1965, p.107-108). The trend toward forming spiritualistic groups during the period from mid-eighteen hundreds to the early nineteen hundreds appears to have counterparts in the West (Gauld, 1968). The widespread nature of this movement encouraged numerous scientists, such as the chemist, Aleksander Mikhailovich Butlerov, to organize early investigations (Platanov, 1965, p.39).[7]

Several pioneer studies were carried out before the 1900's. In 1875 the Physics Society of the University of St. Petersburg initiated a special "commission for investigating mediumistic phenomena". The commission was directed by the well known chemist Dmitry Ivanovich Mendeleev[8] (who developed the famous 'periodic system') and was composed of eleven other prominent scientists (Platanov, 1965, p.39). The commission worked for about one year inviting well known mediums from abroad for seances.[9] In the area of quantitative research pioneer experiments were undertaken as early as the late 1800's in Tashkent (Wilkins, 1965).

The Russian Society for Experimental Psychology, founded in 1891, investigated clairvoyance, psychometry, and poltergeist phenomena. This group kept in close contact with the Society for Psychical Research in London, England through Count Perovsky-Petrovo-Solovo, the Society's Honorary Secretary for Russia. Reports of several prominent researchers from other countries were made available.[10]

The Period of Bechterev's Influence

V. M. Bechterev was quite instrumental in spawning organized research of parapsychological phenomena. He has been called by some Russian parapsychologists the pioneer and father of the subject in the U.S.S.R. (Vasiliev, 1963, p.3). Khokhlov writes of Bechterev:

> His contribution to the research in psychoneurology in Russia was enormous, yet he never lost his intense interest in the field of parapsychology (Khokhlov, 1968, p.231).

In 1907 he founded the Psychoneurological Institute, sometimes called the Institute for Brain Research (Vasiliev, 1965, p.1). This institute was instrumental in leading several independent psychologists to an interest in telepathy (Khokhlov, 1968). Bechterev formed the pioneer core, (including L.L. Vasiliev) which was active in encouraging and revitalizing interest in parapsychology in the U.S.S.R. in the 1960's. Much of Bechterev's early work in psychical phenomena concerned V. L. Durov's telepathy experiments with dogs. This period is considered (Mutschall, 1968, p.2; Ryzl, 1969) to mark the beginning of Soviet research in parapsychology.

Durov reported that he had trained dogs to respond to telepathic commands in his book Training of Animals. Bechterev found Durov's

performances and experiments convincing and as a result took an active interest. Durov would take the dogs head in his hand and stare motionlessly into the dog's eyes. He would "telepathically" convey prearranged instructions to the dog. The dog would sometimes rush off and complete the task, often with minimal error. Tasks ranged from the relatively simple, such as barking at a predetermined person or fetching a particular book lying on a table, to the more complex, such as carrying out a previously agreed upon sequence of tasks. One experiment required the dog to sit on a stool by a piano and hit the keyboard with his paw. He was then supposed to take a chocolate candy from a seated woman and deliver it over to another man. Such experiments were confirmed by noted scientists V. M. Bechterev, P. P. Larzarev, and A. V. Leontovich (Ryzl, 1969). Durov was given a state supported laboratory in Moscow during the 1920's called Zoopsychological laboratory (Ryzl, 1969, 1970) and continued his experiments there until his death in 1934. Bechterev summarized some of the telepathic experiments that Durov, others and himself carried out in the Proceedings of the Psychoneurological Institute in 1920.[11] A report of these experiments later appeared in German[12] and then in English (see Bechterev, 1949). He writes of these experiments "...it is hardly necessary to say how desirable further (parapsychological) experiments in different directions with dogs would be" (Bechterev, 1949, p.175).

In 1922 a special commission for the Study of Mental Suggestion, attached to the Psychoneurological Institute, was formed by Bechterev. This special committee was responsible for the continuation and

elaboration of experiments that Bechterev himself had started. Their attention was focused on two types of phenomena:

(1) The effect of mental suggestion on a hypnotized human subject.

(2) Psychophysiological effects of a magnetic field on a hypnotized subject (Vasiliev, 1963, p.1).

The members of the commission were reputable scientists, including psychologists A. K. Borsouk, N. F. Nikitin, V. C. Rabinovich, medical hypnotists V. A. Finne, N. A. Panov, physiologists L. L. Vasiliev, V. M. Karassik, physicists, A. H. Petrovsky, V. A. Podierny, a philosopher, C. I. Povarnin, and others. The results of this group were presented at the Second All Russian Congress of Psychoneurology, in January, 1924, in Petrograd. One of the presentations at the Congress was given by the Russian psychologist Professor K. I. Platanov. His address was accompanied by a demonstration of an experiment in "mental sending to sleep and awakening" from a distance[13]. The Congress endorsed the necessity of further experimentation of so called mental suggestion as well suggesting Russian participation in the International Committee for Psychical Research.

In the 1920s a Russian committee for Psychical Research was organized as an affiliate to the International Committee for Psychical Research founded by Charles Richet, in France. This Russian committee for parapsychology was initiated by A. V. Lounacharsky, then Minister of Education and included V. M. Bechterev, P. P. Lazarev, A. E. Kotz (Director of the Moscow Darwin Museum), psychiatrist G. V. Reitz and L. L. Vasiliev (Vasiliev, 1963, p.2).

During this period several papers were presented and some of the work was reported in writing.[14] Especially successful were experiments with Mrs. Kouzmina, carried out in the Department for Nervous Diseases of the Twenty-Fifth October Memorial Hospital (see Vasiliev, 1963, Chapter 4). As with much of the early work in Russia, these experiments were influenced by the earlier work of French investigators.[15] The work of V. A. Podierny, V. N. Finne, and Vasiliev was a repetition of the work with Joire at the University of Lille. The patient, Kouzmina suffered hysterical paralysis of her left side. Through suggestion under hypnosis she reportedly regained her ability to voluntarily move the paralyzed extremities. A similar effect was reported to have been produced with mental suggestion. While Kouzmina was hypnotized one of the three experimenters would mentally make a prearranged suggestion to her. Vasiliev reports that she would make the movement. When asked why she made the movement she stated "I was told to do so by so-and-so" as well as being able in many instances to identify the telepathic sender.

In 1926 another commission was set up by the Psychoneurological Institute under Bechterev. The members included researchers of earlier commissions as well as several others including two physicists, two physiologists and three medical psychiatrists. The following investigations were carried out:

1. Objective methods of analysis and control of 'spontaneous' manifestations of mental suggestion were devised (Borichevsky).
2. Hundreds of experiments of 'guessing of

(preselected) visual images' (G. V. Reitz).

3. Experimental researches on manifestations of supposed recognition (Borichevsky).
4. A series of 'guessing' experiments with the subject P. which gave negative results (Reitz and A. V. Doubrovsky, at the suggestion of V. M. Bechterev).
5. A series of experiments on neuromuscular overexcitation using the hypnotic methods of Charcot, and by means of the conditioned reflex method (Vasiliev, V. A. Podierny and V. A. Finne).
6. A number of investigations recording pulse and blood pressure while punctures were made in various parts of the body, hands and legs (Vasiliev and Doubrovsky, in conjunction with demonstrations by To Rama).
7. Numerous experiments on the effects of placing a hand or a movable metal needle (Vasiliev and Doubrovsky, at the suggestion of V. M. Bechterev).

(Vasiliev, 1963, p.4)

In 1932 the Institute for Brain Research founded by Bechterev and then headed by Professor Ossipov "received an assignment to commence an experimental study of telepathy with the aim of determining as far as possible its physical basis..." (Vasiliev, 1963, p.4). This work

lasted until 1938 and was carried out by Vasiliev with the collaboration of I. F. Tomashevsky (physiologist), A. V. Doubrovsky (medical hypnotist), R. I. Skariatin (physicist and engineer) and G. U. Belitzky. Radio technologists (e.g., V. F. Mitkevich) acted as consultants.[16]

Other scientists who studied the problem of psychic phenomena during the 1920's and 1930's were B. B. Kazhinsky and A. G. Ivanov-Smolensky.[17] Kazhinsky, an engineer, worked for some time with V. L. Durov in Moscow at the Laboratory of Applied Comparative Psychology (Zoopsychological Laboratory). The publication of his Peredocha Myslei (Thought Transmission) categorizes him as one of the pioneers of mental suggestion in the U.S.S.R.

Research conducted between 1920 and 1938 tended to reflect the basic principles of the prevailing materialistic concepts. Every attempt was made to tie parapsychological phenomena to physiological correlates.[18] Generally the writings reflect the feeling that even apparently unexplainable phenomena should not be left to the realm of religious superstition, but should be explored and observed and explained through the application of physical principles.

Period of Total Rejection (1938 - 1959)

With the rise to power of Stalin in 1930 the work in parapsychology became increasingly difficult to carry out (Morrow, 1965). Although the investigations initiated by Bechterev and carried on by his followers, such as Vasiliev, continued publication became difficult. Many of the results of experiments carried on between 1932 and 1938 were not published until the 1960's.

In 1938 the experiments into the phenomena of telepathy at the Institute for Brain Research being conducted under Vasiliev stopped due to an official hostile attitude directed at what was considered to be remnants of religious superstitions. The study of the phenomena of parapsychology could easily be interpreted as "...a deliberate attempt to undermine the doctrines of materialism" (Teodorovich, 1967, p.17). This interpretation during the Stalin era was sufficient to force underground any remaining interest since political crimes were punished harshly. Further experiments were forbidden (Morrow, 1965, p.vii; Teodorovich, 1967, p.17) and no publications of parapsychological investigation appeared between the years 1938 and 1959.

It is interesting to note that the life of Vasiliev, between the years 1938 (the year of the greatest purge) and 1943, is a blank according to the Biographical Dictionary of Parapsychology by Helene Pleasants as well as other versions of his biography (Khokhlov, 1968, p.232). From 1943 to 1965 he was Professor of Physiology at the University of Leningrad.

Although there was no overt parapsychological activity, Khokhlov (1968) suggests that interest in parapsychological phenomena smoldered under the surface; similarly, Teodorovich (1967) suggests that research continued covertly and that foreign science reports on parapsychology permeated the U.S.S.R. unofficially. Reports concerning the sensitive Wolf Messing support the likelihood of the above claims (Svink-Zielinski, 1969; Reznichenko, 1970).

Apparently, Wolf Messing appears to have been an exception to the ban on telepathy during the Stalin gap. Messing, who fled to Russia in

1939 when Hitler's army invaded Poland, was a stage-telepathist in the U.S.S.R. during the 1940's and 1950's, who attracted much attention for his paranormal phenomena. In the West he drew the interest of Einstein, Freud and Gandhi, among others, and in the Soviet Union writers Aleksei Tolstoy, K. Chukovsky and General A. Ignatev asked to meet him. Messing has claimed in a Russian publication (Nauka i Religia, Nos. 1-7, 1965) that Stalin himself investigated Messing's psychic abilities (Svink-Zielinski, 1969). However, Soviet scientists showed reserve toward Messing. Messing suggests that the reason for the caution of Soviet scientists was that they could not find the material mechanism of the phenomena he displayed. He writes,

> ...when the scientists tested my abilities, they tried above all else to fit everything that was incomprehensible and inexplicable into laws that were already known. Whatever did not fit into this framework they simply recommended me not to do (Nauka i Religiya, 1965, No.10, p.72-73--cited by Teodorovich, 1967, p.19).

During the Stalin era the links of communication with non-Soviet psi researchers were disconnected. Not until 1956 (three years after Stalin's death) was contact established again between Russian and Western parapsychologists. At this time Vasiliev contacted R. Warcollier, then President of the Paris Institut Metapsychique. However, there was still no public sign of a reemergence of open and active interest in parapsychological investigation until the late 1950's and early 1960's. At that time parapsychology began to gain popularity and gradual acceptance in the academic and scientific circles of the U.S.S.R., largely through the efforts of L. L. Vasiliev.[19]

Period of Growing Acceptance (1959 - Present)

The year 1959 marks the beginning of a period of resurgence of an active interest in parapsychology in the U.S.S.R. Two events stand out during the initiation of this period of growth.

(1) The publication of Vasiliev's manuscript entitled Tainstvennyye yavleniya chelovecheskoy (Mysterious Phenomena of the Human Psyche) which had a limited circulation.

(2) A series of successful long distance telepathy experiments alleged to have been carried out by the U.S. Navy.

Vasiliev's 1959 manuscript had relatively little influence in eliciting a response to psi research from the academic community when compared to the reaction of the Soviet academic and political establishment to reports of the Nautilus experiments.

The Nautilus Experiments

A key date in the reemergence of parapsychological activity in the U.S.S.R. is 1959 (Anfilov, 1961; Vasiliev, 1962, p.5-6; Platanov, 1965, p.42; Teodorovich, 1967). In this year, the French magazine Constellation (No. 140, December 1959) published an article by J. Bergier called "La transmission de pensee-arme de guerre" (Thought transmission--weapon of war). The article described telepathy experiments between subjects on land in the United States and subjects in the submarine Nautilus while underwater, many miles out to sea. This article was soon followed by another about the Nautilus experiments.[20] These

developments inspired Vasiliev to bring parapsychology out of hiding. He writes, "This totally unexpected foreign confirmation of our twenty-five years old experiments compelled me to make them known to a wide circle of scientific workers" (Vasiliev, 1963, p.6).

Although the Nautilus story was denied by Washington and other U.S. sources (see "Nautilus hoax exposed", Newsletter of the Parapsychology Foundation, November-December, 1963, 10(6)), it encouraged Vasiliev to state:

> Today the American Navy is testing telepathy on their atomic submarines. Soviet science conducted a great many successful telepathy tests over a quarter of a century ago! It's urgent that we throw off our prejudices. We must again plunge into the exploration of this vital field.

Vasiliev and his colleagues appeared to truly believe the French reports about the supposed American experiments. In this connection it should be noted that the Parapsychology Laboratory (founded by J. B. Rhine) at Duke University received a financial grant from the U.S. Office of Naval Research for experiments in ESP, in 1952 (Rhine & Pratt, 1957, p.203). Vasiliev was aware of this fact (Vasiliev, 1963, p.162) and this certainly tended to make the Nautilus story more believable to Vasiliev and others in the U.S.S.R.

The Nautilus story can be considered the impetus for the modern era of parapsychological research in the U.S.S.R. Several developments can be seen to follow directly from the wide publicity given to the Nautilus story:

1. In 1959 - 1960 the Council of Scientists resolved "that the problems of parapsychology are important and that they should be studied properly" (Banerjee, 1962, p.43).

2. In April 1960, Vasiliev gave a key paper at the Leningrad Conference to commemorate the anniversary of the Discovery of Radio, held in the House of Scientists.[21] This paper was published in the Journal of the All Union Radio Technological Society (Vasiliev, 1963, p.6).
3. A symposium was held at Leningrad University in June 1960 (Mutschall, 1968, p.3; Teodorovich, 1967).
4. There appeared a government funded laboratory for the investigation of telepathy at the University of Leningrad, within a year after the Nautilus story. The laboratory was under the direction of L. L. Vasiliev.
5. The writings of L. L. Vasiliev began to appear increasingly in the Soviet literature. Three majorworks by Professor Vasiliev appeared soon. Mysterious Phenomena of the Human Psyche (Tainstvennyye yavleniya chelo-vecheskoy psikhiki, Moskva, Gos. izd-vo politicheskoy literatury, 1959) was published in three successive printings, of which the second totalled 175,000 and the third, 130,000 copies. His Suggestion at a Distance (Vnusheniye na rasstoyannii, Moskva, Gos izd-vo politicheskoy literatury, 1962) was issued by the Publishing House of Political Literature in a first printing of 120,000 paperback copies, with another 100,000 copies scheduled for 1966. His second work, Experimental Studies in Mental Suggestion (Eksperimeutal-nye issledovaniya myslennogo vnusheniya, Moskva, izd-vo Leningradskogo universiteta, 1962), a survey of Soviet parapsychological work in the 1920's and mid-1930's, was published by the University of Leningrad in 7,000 copies (Mutschall, 1968, 12; figures from Editor's Note, 1968, p.339). Also

B. B. Kazhinsky's Biologicheskaya radiosvyaz (Biological Radio Communications) appeared in 1962 (Kiyev, AN Ukr SSR).

6. A sudden boom in the discussion of parapsychological topics in the academic community, Soviet journals, magazines, and newspapers.[22] However, most articles dealing with parapsychology and related areas in the early 1960's were published in the more popular publications, rather than in the strictly scientific journals (Editor's Note, International Journal of Parapsychology, 1965, 7(4), p.402). A bibliography of parapsychology in the U.S.S.R. (Naumov, 1971) confirms this trend. Out of 324 publications, 236 articles appear in popular scientific publications; the remaining 88 are books or articles in prestigious, academic journals (see Table 4).

A parallel boom in the early 1960's is observed in certain East European countries. Ryzl (1971, p.88), who lived in Czechslovakia until 1967, writes that in the 1960's interest in parapsychology in Eastern Europe grew rapidly, and the situation of East European parapsychologists had several promising features, such as government interest, emphasis on practical application, and innovative research ventures. In 1961, he had observed

> At the present time, the interest in parapsychological problems in the U.S.S.R. (as well as in other East European countries, of which Czechoslovakia, Poland, East Germany, and Yugoslavia deserve to be mentioned) is rapidly increasing (Ryzl, 1961, p.85).

As far as can be assessed, parapsychology in the U.S.S.R. appears to have picked up in 1959 where it left off in the 1930's. Even though interest in research on psi phenomena still existed during these interim years, it was not organized properly and denounced as 'mysticism and

idealism' (Mutschall, 1968, p.1). Only isolated followers of Bechterev had continued an underground participation in parapsychology.

Rapid Growth

Enthusiasm of Soviet scientist investigating parapsychological phenomena was high in the early 1960's (Banerjee, 1962) and consequently work and interest in telepathy and related areas developed rapidly to such an extent that Ryzl felt justified in writing

> One conclusion seems justified: Parapsychology in the European Communist countries, and especially in the U.S.S.R. occupies a strong position. We can expect it to be developed with determination, Soviet scientists being well aware of its potential for practical applications (Ryzl, 1968, p.274-275).

Mutschall writes:

> For many years, any attempt to study telepathic phenomena was denounced in the Soviet Union as mysticism and idealism. But today, in relation to the increased interest in the higher priority of the biological sciences in conjunction with space research, telepathy is getting the full-scale treatment as a form of 'biological radio communication' (Mutschall, 1968, p.1).

An even more striking report, emphasizing the strong position of parapsychology in the U.S.S.R. is presented by Ostrander and Schroeder (1970). It was their publication that stimulated a more active interest among Westerners in the parapsychological activities of the Soviet world. To see how this sudden change, from weakness to strength, from non-acceptability to relative acceptability, has come about it will be necessary to briefly point out some key developments.

In 1963, Nikolai Aroyan, chief designer at the Building Materials Research Institute of the Armenian SSR, held some telepathic seances at

the Workers' House in Erevan and amazed his audiences with his telepathic abilities. The Kommunist, November 29, 1963 (page 4), the official paper of the Armenian Party Central Committee, in discussing the talents of Aroyan, wrote, "the ability to perceive another's thoughts or any phenomena of life either telepathically or by contact is common to all" (cited by Teodorovich, 1968, p.20). Slightly later the same paper (December 24, 1963) reported that A. A. Megrabyan, head of the psychiatric department of the Erevan Medical Institute, corresponding member of the Academy of Medical Sciences of the U.S.S.R. and known for his orthodox Marxist approach to psychological problems, was quite interested in the abilities of Aroyan.

The year 1965 marked the establishment of the Department of Bioinformation of A. S. Popov's Scientific and Technical Society of Radio Engineering and Telecommunications under the direction of Dr. I. M. Kogan.[23] This laboratory was responsible for research in the means of communication between various living organisms (Khokhlov, 1968, p.233). Its stated objectives were to discuss physical, biological and philosophical aspects of bioinformation and to acquaint the Soviet scientific community with parapsychological research conducted outside the Soviet Union. Since its formation, branches have been set up in other cities of the U.S.S.R., which include Leningrad, Novosibirsk, Odessa, Zaporozhye and Taganrog (Ryzl, 1969, p.43). Along with research these centres are active in public information. In the same year Kogan presented a paper on a possible theory of information transmission in telepathic phenomena to the Scientific Council of the Academy of Science of the Soviet Union (July 3, 1965).

On April 4, 1966 seven hundred participants of the International Symposium on Parapsychology met at the House of Scientists, Academy of Sciences, U.S.S.R., in Moscow (Mutschall, 1968, p.4). The timing of this initial conference in parapsychology in the U.S.S.R. appears to be significant. Khokhlov (1968, p.233) writes "coming on the heels of the International Congress of Psychology at Moscow, this symposium brought parapsychology into the forefront of scientific attention in the U.S.S.R."

Another 1966 event that several writers have attached significance to is the publication of an issue (No.3) of Science and Religion (Nauka i Reliagiya) in Moscow which devoted about one-third of its pages to a discussion of "telepathy: pro and contra" (Ryzl, 1969; Khokhlov, 1968; Mutschall, 1968; Ostrander & Schroeder, 1970). The magazine presented a debate by scientists on the subject of telepathy. The significance of the symposium in Science and Religion

> ...goes beyond its broad scope and the relative prominence of the participants. The timing of the publication and its general tone indicates that the Soviet government today tolerates in some scientific areas, and especially in parapsychology, a certain freedom of inquiry that on the long run can only be beneficial to everyone concerned (Khokhlov, 1968, p.238).

As well as being discussed at scientific conferences, and written up in scientific journals, parapsychology experiments were getting publicity from newspapers. For example, reports of a telepathy experiment between Moscow and Novosibirsk appeared in the Moskovskaya pravda, June 17, 1966. Similarly, a report of successful telepathic communication appeared in the Komsomolskaya pravda, July 7, 1966.

Press coverage and reports of positive experimental results in such influential papers were indicative of a changing political attitude toward parapsychology. With the restrictive attitude of the pre 1960's toned down and some of the political barriers hurdled researchers interested in psi phenomena appeared to be freer to work and report their data. This lessening of political opposition to research on such concepts as telepathy was acutely observed by those intimately associated with the parapsychological sphere of events in the U.S.S.R. After returning to his home in Czechoslovakia from a visit to Russia in 1967, Milan Ryzl (1968) reports,

> Even though parapsychology in the Soviet bloc countries has not yet found general acceptance as a distinct scientific field of undisputed value to society, the main philosophical and ideological objections, always of overriding importance in communist countries, seem to have been overcome (p.263).

Ryzl's impressions were very positive with regard to the gaining respectability of parapsychology. He conveys a major shift in official influence. He reports, for example, the case of at least one earlier critic of parapsychology who by 1967 was having difficulty getting his critical comments published. Concerning this general trend he writes,

> Thus, the edge of criticism has been sharply blunted. Not only is it published and heard much less frequently than formerly, but such criticism as continues is no longer directed at the field as such. Instead, the critics aim at promoting more fruitful methodological approaches (p.263).

Ryzl's impressions are very likely accurate when viewed in relation to the official resistance characteristic of the pre-1960 era. However, his impressions may appear over optimistic if seen out of perspective and left unqualified. Official obstacles were not entirely absent

during this period. An international conference on parapsychology shortly after Ryzl's visit did indeed appear to experience official hinderances (Medhurst, 1968; Pratt, 1973). The conference did not flow smoothly as the result of a general disruption of plans likely brought on by indirect outside pressures. The conference held in Moscow in June 1968 and organized by Naumov had originally been scheduled for December 1967. Over two hundred titles were sent in for the conference as the result of a call for papers. However, only a select few (about 30) were actually presented due to pressures to keep the conference small. On the morning of the first day of the conference an unfavorable article dealing with an ESP experiment carried out in Leningrad appeared in Pravda (Chijov, 1968). This apparently discouraged several of the participants and some Russians who had originally planned to participate never took part. At least one participant of the conference viewed the impediments as possible indirect pressures from official sources within the wider scope of pressures exerted against liberalization in all intellectual fields (Pratt, 1973, p.70).

In October 1970, a similar symposium on telepathy was organized by the Bioinformation Unit of the Scientific Technical Society for Radiotechnics and Electrocommunication in Moscow under the chairmanship of Professor M. Kogan with over 500 participants (Parapsychological Review, January-February, 1972, p.12).

The fact that such conferences have been planned, organized and carried through strongly indicates that the censorship, which a decade earlier had prohibited the publication of articles on parapsychology, apparently has reversed itself. In fact even state organizations began

to display an unusual interest in the subject (Ryzl, 1969, p.17).

An important pattern in the trend towards political and academic acceptability of parapsychology in the U.S.S.R. has been the multi-disciplinary approach and the emphasis on involving other academic disciplines. For example, on January 16, 1971 a seminar was held by the Geology Department of Moscow State University on the problem of the biophysical effect or, as it was formerly called, dowsing. More than 100 representatives of various scientific research institutes and organizations took part in this seminar (see Parapsychology Review, May-June, 1972, p.27). Similarly there is a conscious effort on the part of Soviet parapsychologists to inform other disciplines of their findings. For example, Professor E. K. Naumov gave details of achievements of parapsychological investigations made in the Soviet Union as well as in foreign countries at the second symposium on cosmic radio communications in Moscow on November 17-18, 1971 (see Parapsychology Review, May-June, 1972, p.3).[24]

Parapsychologists in other East European countries have been making similar advances in gaining acceptability. In Czechoslovakia, Dr. Zedenek Rejdak was reported trying to persuade Czechoslovakian officials to authorize the publication of a bimonthly periodical devoted to parapsychology (see Parapsychology Review, January-February, 1972, p.12). More recently, Viktor Adamenko, Zdenek Rejdak and Max Toth organized the Psychotronic Research Conference in Prague (June 18-22, 1973). This conference concerned parapsychological research in East European Countries, in which Soviet scientists took an active part (Sergeyev, 1974). The conference gave birth to the International

Association for Research in Psychotronics. Scientists from twenty-two countries concerned with the problems of psychotronics organized the International Association to co-ordinate research in the field (Rejdak, 1974). A Paris conference is planned for the summer of 1975 and UNESCO membership is to be considered in May 1975. The new association has as its president Dr. Zdenek Rejdak and as vice presidents, Dr. Stanley Krippner (U.S.A.) and Professor G. A. Samoilov (U.S.S.R.).

In order to provide an overview of the extent of the work being carried on, a Table of possible geographical locations of parapsychological research in the U.S.S.R. is included (see Table 1). The word 'possible' is used to indicate that there is some confusion in the literature as to what constitutes a 'research area'; that is a geographical area where research is being carried on. Those areas listed in Table 1 do not necessarily represent centres of parapsychological investigation. Some place names may only indicate that a part time researcher in parapsychology lives there or is associated with an academic institution in that city. Therefore, the parapsychological research associated with the cities listed in Table 1 varies in number of workers, part time or full time status, degree of organization and degree of permanence.

The sudden interest in parapsychology in the U.S.S.R. in the 1960's may have led to exaggerated estimates of the number of research centres. Dr. Eugene B. Konecci, Director, Biotechnology and Human Research, Office of Advanced Research and Technology, in the U.S. National Aeronautical and Space Administration, told a meeting of the International Astronautics Federation, in Paris in the autumn of 1963,

TABLE 1

AREAS OF RESEARCH IN U.S.S.R.*

Russian Republic

*Moscow (Capital) (Banerjee, 1962; Stone, 1964; Teodorovich, 1967; Naumov, 1968; Mitchell, 1968; Velinov, 1968; Moss, 1971)
*Leningrad (Vasiliev, 1962; Banerjee, 1962; Teodorovich, 1967; Naumov, 1968; Ryzl, 1971)
*Novosibirsk (Teodorovich, 1967; Naumov, 1968; Ryzl, 1969a)
*Nizhny Tagil (Ullman, 1971; Ryzl, 1971)
Irkutsk
Khabarovsk
Vladivostok
Tomsk
*Omsk (Banerjee, 1962; Stone, 1964)
Kazan
Saransk
*Saratov (Banerjee, 1962; Stone, 1964)
Voronezh
Cheboksary
Ivanovo
Krasanodar
*Taganrog (Ryzl, 1969)
*Sverdlovsk (Ullman, 1971; Ryzl, 1971)

The Ukraine

*Kiev (Capital) (Banerjee, 1962; Stone, 1964; Teodorovich, 1967; Ryzl, 1969)
*Odessa (Banerjee, 1962; Stone, 1964; Ryzl, 1969)
*Zaporozhye (Ryzl, 1969)

Georgia

*Tbilisi (Capital) (Banerjee, 1962; Stone, 1964; Ullman, 1971; Ryzl, 1971)

Uzbekistan

Tashkent (Capital)

Kazakhstan

*Alma-Ata (Capital) (Moss, 1971)

*This list of "areas of research in the U.S.S.R." has been taken from Ostrander and Schroeder (1970, p.xv). Those city names with stars (*) before them, have been confirmed by other sources. Generally, other sources are indicated following the city name.

Estonia

Tallin (Capital)
*Tartu (Banerjee, 1962; Stone, 1964)

Lithuania

Kaunas

Byelorussia

Minsk (Capital)
Grodno

Moldavia

Kishinev (Capital)

EAST EUROPE

Czechoslovakia

*Prague (Capital) (Ullman, 1971; Moss, 1971)
*Hradec Kralove (Ryzl, 1969)
*Bratislava (Herbert, 1972)
Nitra

Bulgaria+

*Sofia (Capital) (Ryzl, 1971; Moss, 1971)
Petrich

Poland

*Warsaw (Capital) (Borzymowski, 1962; Vasiliev, 1963, p.119)
Pozan

Romania

Bucharest (Capital)

East Germany

*East Berlin (Capital) (Vasiliev, 1963, p.119; Ryzl, 1969)

+Some areas of research between World War I and World War II have been reported by Borzymowski (1962) as: Warsaw, Lwow, Krakow, Piotrkow, Brzesc, Wilno.

that the Soviet Union had "established at least eight known research centres" concerned with telepathy. Dr. Konecci also said that "if results of conducted experiments are half as good as some claim, then they may be the first to put a human thought into orbit or achieve mind-to-mind communication with humans on the moon" (Editor's Note, 1968, p.339).

Similarly, W. C. Stone wrote in 1964 that since the establishment of the Leningrad laboratory in 1960, at least seven other research centres opened for experimental work in telepathy (located in Kiev, Tbilisi, Omsk, Saratov, Tartu, Oedssa, and Moscow) (cited by Mutschall, 1968, p.4). However, Stone failed to cite the source of his data. Stone also claimed that the Pavlov Institute of Higher Nervous Activity in Moscow incorporated telepathic research into its program under the heading "The Problem of Information Transmission" (Mutschall, 1968, p.4). This remains unconfirmed.

The latest reports (Ryzl, 1973; Pratt, 1973) and those from firsthand travel accounts (Ullman, 1971; Moss, 1971) suggest about five or six centres of major concern. The most organized work appears to be located at:

1. Laboratory of Physiological Cybernetics, University of Leningrad (Director: Professor P. I. Gulyaev since the death of Vasiliev in 1966).
2. Bioinformation Department in the U.S. Popov Scientific Technical Society for Radiotechnics, Electronics and Communication, Moscow (Chairman: Professor I. M. Kogan).
3. A Laboratory Division of the Department of Physics of the State

Engineering College, Moscow (E. K. Naumov). Involved in creating the laboratory were several eminent scientists including Dr. Ya Terletsky (Chairman, Department of Physics, Moscow University), Dr. E. Sitkovsky (Academy of Social Sciences), Dr. Pavel Oshchepkov (founded of radar in U.S.S.R. and president of the Engineering Institute).

4. Laboratory of Vision, Institute of Problems of Information Transmission of the U.S.S.R. Academy of Science (Director: M. S. Smirnov).
5. Pedagogical Institute in Sverdlovsk (Professor A. S. Novomeysky with a group of coworkers in Sverdlovsk and adjacent Nizhny Tagil).
6. Institute of Suggestology, Sofia, Bulgaria (Director: Dr. G. Lozanov).

There are as well several part time parapsychologists who are not necessarily associated with these centers (Herbert & Cassirer, 1972, Report #2; Zinchenko et al., 1973). For example Professor Ya P. Terlecky, Director of the Department for Theoretical Physics at the Patrice Lamumba University in Moscow has attempted to explain ESP by theoretically assuming the existence of as yet undetected elementary particles with negative energy--a theory based on an extension of known physical principles (Ryzl, 1968). Similarly, I. F. Shishkin (see Journal of Paraphysics, 1969, 3(1)) examines the possibility of a physical explanation for telepathic phenomena (Newsletter of the Parapsychology Foundation, July-August, 1969, 16(4), p.10, 13).

In tune with the question of acceptability Platanov (1965) describes an interesting display of the U.S.S.R. Academy of Sciences.

He writes,

> A bracelet is put on a person's forearm, wires running from the bracelet to a mechanical hand. The person mentally clenches his fist, and the mechanical hand reproduces this movement; the person mentally opens his hand, and the fingers of the mechanical hand extend. Such a 'bioelectric manipulator' can be seen in the pavilion of the U.S.S.R. Academy of Sciences at the Exhibition of National Economic Achievement (Platanov, 1965, p.41).

To further impress upon the reader the quality of the acceptability of parapsychological research in the U.S.S.R., a partial list of statements favorable to parapsychological research made by influential people, politicians and academics has been included (see Table 2). Statements supporting parapsychological investigation have come from several politically, academically powerful people in the U.S.S.R. (e.g., Nickolai Simonov, vice-president of the Academy of Science of the Soviet Union and Nobel prize winner in Chemistry--see Table 2).

Dermo-Optical Perception (DOP)

In the early 1960's a considerable portion of the Soviet public was attracted by reports of subjects who claimed to be able to perceive colors, distinguish geometrical shapes, and read written or printed texts while blindfolded by merely touching the respective surface. This ability has come to be known by several names: 'eye-less vision', 'dermal-optical vision', 'extracutaneous finger-vision', 'aphotic digital color sensing' (Buckhout, 1965), 'tactile sight', 'human extra-ocular color sensitivity' (HECS) (Razran, 1966), 'cutaneous color discrimination' (Yantz & Broome, 1969), and was publicized in papers, magazines, popular, semi-popular and academic publications in the early 1960's. Naumov (1971) lists 78 articles related to dermo-optic

TABLE 2

SUPPORTIVE STATEMENTS BY INFLUENTIAL PEOPLE*

Name	Position	Supporting or Favorable Response
K.E. Ciolkovsky (1857-1925)	highly esteemed Soviet Soviet rocket pioneer	"The phenomena of telepathy are necessary and they will aid the whole development of mankind". (Ryzl, 1969, p.16)
Dr. F. Siegel	astrophysicist	Refers to parapsychology as the "science of the future". (Khokhlov, 1968, p.235)

In the September 1966 issue of Nauka i Religiyz (No.9, p.41-45) the following presented statements supporting parapsychological research (Khokhlov, 1968, p.239; Teodorovich, 1967, p.18).

N. N. Simonov	Vice President of the Academy of Science of the Soviet Union; Nobel Prize winner in Chemistry
M.A. Leontovich	Academician
A.L. Mintz	Academician
Gleb M. Frank	Academician
A.N. Leontiev	Neurophysiologist
V.F. Asmus	Biophysicist
P.V. Rebinder	Physical Chemist (University of Moscow)
E. Parnov	Chemist
L. Sukharebsky	Medical Practitioner

K.E. Tsiolhovsky	Pioneer in space-travel research and founder of the theory of interplanetary communications	"...telepathic phenomena are not open to doubt. Not only has a tremendous quality of relevant factual

K.E. Tsiolkovsky (continued)		material been accumulated, but there is hardly a family man of some experience who will not admit to having some personal experience of telepathic phenomena. The attempt to explain them from a scientific point of view should be respected" (cited by Teodorovich, 1967, p.21)
V. Tugarinov	Chairman, Department of Philosophy, University of Leningrad	"All critics of telepathy research are only using Marxism-Leninism to support their scientific/conservatism" (Ostrander and Schroeder, p.xix)
S. Gellerstein	Psychologist - Physiologist	Wrote an article appealing for a serious look at parapsychology entitled "Do Not Put Obstacles in the Path of Scientific Inquiry" (Khokhlov, 1968, p.237).
E.A. Asratyan	Corresponding member of the Academy of Sciences	"...certain known facts compel us to refrain from categorically denying either the existence of this phenomena (telepathy) or the need for its further study" (Asratyan, 1961, 10)

* Note the variety of the fields of interest of those mentioned.

sensitivity published in the U.S.S.R. between the years 1960 and 1965.[25]

The particular interest in the DOP phenomena in the U.S.S.R. is worthy of being dealt with separately due to its special significance in the development of Soviet parapsychology. This significance has several aspects: (1) the sensational reports of very positive results with isolated subjects attracted much attention, relative to some other psychical phenomena, both in the popular press and the scientific press; (2) the scientific investigations of this phenomena represent a unique contribution of Soviet researchers to the international parapsychological scene; (3) this area of study in the U.S.S.R. represents a line of research independent of psi research in other countries. Unlike Soviet psi research carried out during the 1920's and 1930's which was very much influenced by French, British and German investigations, the focus on DOP in the 1960's appears to be a uniquely different and independent Soviet contribution.

Although early reports of this phenomena appeared in both the West[26] as well as Russia[27], 1962 marked a great resurgence of interest in this alleged ability. The prime focus of this attention was twenty-two year old Mrs. Rosa Kuleshova from Nizhny Tagil. Kuleshova had worked for some time in an institute for the blind where she became acquainted with Braille. After several years of training, she found that she was able to read flat printing as well. Russian scientists first discovered her unique talent when she was admitted to a clinic for nervous diseases because of epileptic troubles (Ryzl, 1970, p.155).

Kuleshova was first tested by Dr. J. M. Goldberg, a neuropathologist, who brought her to M. M. Kozhevnikov. Kozhevnikov conducted a number of

experiments with her at the psychology laboratory at the Nizhnii Tagil Teacher Training Institute, claiming confirmation of Goldberg's positive results. This encouraged Goldberg to demonstrate Kuleshova's extraordinary ability to a conference of the Urals Division of the U.S.S.R. Society of Psychologists held in Nizhnii Tagil, September, 1962. The participants at the conference requested Goldberg to write an article for Voprosy psikhologii (Goldberg, 1963). This had the effect of placing Kuleshova and DOP in the limelight of scientific study.

To make this claim of the exceptional ability to read with the fingers or other parts of the body Russian researchers (e.g., Novomeiskii, 1963) as well as Western researchers (e.g., Razran, 1966) continually point to pioneer work done by the well-known physiologist A. N. Leont'ev.[28] He found that the palm of a man's hand was capable of reacting to light beams that had been passed through heat-absorbing filters. A colored light which S could not see was beamed through heat-absorbing filters onto the palm of Ss hand, and then immediately followed by an electric shock. Ss eventually learned to avoid the shock by moving their hand as soon as the light came on. Leont'ev also established that Ss could differentiate colors of light (e.g., green and red) with their palms. Leont'ev, a scientist of impressive credentials[29] considered the dean of Soviet psychology, headed a panel of top-ranking Soviet scientists (interdisciplinary in nature) to investigate the claims, and scrutinize the testing methodology of DOP reports (Rosenfeld, 1964; Razran, 1966).

Testing with highly sensitive subjects such as Rosa Kuleshova continued during the 1960's. Experiments on Kuleshova were carried on

by Novomeiskii (1963) at the Pedagogical Institute in Nizhi Tagil and later at the University of Sverdlovsk and in Moscow by research institutes of biophysics, physiology, opthamology, neurology and psychiatry (Razran, 1966, p.6). Several reports concerning Kuleshova have appeared in authoritative publications in the U.S.S.R.[30] The popularity of Kuleshova came to a climax with national television coverage on a program called "Relay" which claimed 40-45 million viewers (Rosenfeld, 1964).

Although Kuleshova's ability diminished and eventually disappeared (Ryzl, 1970, p.155) publicity soon uncovered other subjects. Lenachka Bliznova (Rosenfeld, 1964), a nine year old girl was next to appear. Shevalev (1965) director of the Physiology Laboratory of the famous Filatov Institute of Diseases of the Eye, reports on eight year old Vanya Dubovik, whose eyeballs and portions of optic nerves were removed, and who appeared to learn to differentiate colors by touch. Similarly, eleven year old Larisa Perebeinos and eleven year old Natasha Bershadskaia, are reported to have discriminated colors in a dark wooden, experimental box, with their faces almost covered with black cloths and with fastened photographic films showing that no light penetrated their eyes (Shevalev, 1965). Razran (1966), based on discussions with Soviet researchers, suggests that several other children with similar reported phenomena were not publicized in print because of either their young age or their blindness.

However, Soviet experiments were not restricted to testing only sensitive individuals. Novomeiskii (1973)[32] refers to experiments involving up to 80 freshmen and sophomores at the Department of Graphic Arts of Nizhnii Tagil Teachers College. He reports that "approximately

one person in six could readily identify the colors of a pair of squares of colored paper after twenty to thirty minutes of practice" (p.5). Novomeiskii claims successful trials, with special students, of color contrast discrimination when the stimuli were covered with different materials (glass, celophane, tin foil). He also reported the ability of several Ss to discriminate colored pieces of paper. The Ss were sensitive to various colors with the palm of the hand held above the stimulus object, with a distance threshold of up to 80 cm at times.

These reported successes encouraged research on this phenomena in other Soviet block countries such as Bulgaria (see Newsletter of the Parapsychology Foundation, September-October, 1969, 16(5), 23).

DOP phenomena are by no means accepted by all Soviet scientists. The response of the scientific community has ranged from severe criticism to high enthusiasm (Rosenfeld, 1964). The criticism of Lev Teplov (1965)[33] in an article entitled "We are made fools of" is very severe. However, Teplov, author of a well known book in cybernetics had not tested Rosa Kuleshova or anyone like her, and had no specific competence in the field of parapsychology. His criticism has been described as unfounded, and, consequently, dismissed by some scholars (Razran, 1966, p.5-6).[34] The reaction of Teplov was so harsh that the editors of Priroda following the Nyuberg article[35] assert:

> Anyone who is at all familiar with the essence of the studies of skin vision, the serious experiments and verifications conducted by Soviet scientists will be amazed at the declaration of the journalist (sic) L. Teplov under the particular rubric. With only his own invention of peeking to go by, he rejects in wholesale manner established natural phenomena (p.76, cited by Razran, 1966, 6).

The harsh criticism of Teplov appears to parallel criticism of the same topic in the West (see Gardner, 1966). The article by Gardner has clearly been shown to be in error and unwarranted (Razran, 1966).

Such articles as Teplov's that dismiss "a priori" the necessity of studying DOP are, however, not the only form of criticism leveled at the research reports of tactile sight in the Soviet Union. Razran (1966) echoes the views of several Soviet scientists when he criticizes some Russian investigators for not exercising more rigid stimulus and sampling controls (p.9) as well as control for visual input. Similar methodological considerations have been urged by Zubin (1965).

A major source of criticism in such experiments is the possibility of conscious and unconscious cheating. One such fraud, who had become popular in the early 1960's, was exposed by the faculty of the Bechterev Psychoneurological Institute and published in the Leningradskaya Pravda. However, with tightening controls and more rigid methodologies, fraud has been eliminated as a major hypothesis. This improved methodological situation has encouraged A. N. Leont'ev, dean of Soviet psychology, to state "As of now this phenomena (DOP) is real. Further, under special training, it can be found in a great many cases" (cited by Razran, 1966, p.7). Similarly, other supportive statements have been made by the noted psychologist A. R. Luria, Y. Rabkin, one of the most prominent Soviet opthalmologists, B. Konstantinov, member of the U.S.S.R. Academy of Sciences, and P. G. Snyakin, head of the Laboratory of Afferent Systems of the Moscow Institute of Normal and Pathological Physiology (see Razran, 1966, p.7-8).

To summarize, there are basically two kinds of experimental work

on DOP carried out in the U.S.S.R.: (a) investigations of exceptional individuals; and, (b) experiments involving large numbers of "normals". In the first case reports of alleged highly sensitive individuals are relatively rare and are geographically isolated. Reportedly highly gifted subjects such as Rosa Kuleshova (Nizhny Tagil), Nadya Lobanova (Verkhnoya Pyshma) and Lenochka Bliznova (Kharkov) are most certainly special cases. The highly publicized newspaper accounts of these subjects appear to be exaggerated (according to a statement by the faculty of the Bechterev Psychoneurological Institute published in Leningradskaya Pravda, March 1964--see Razran, 1966, p.7). However the work with such individuals by reputable scientists such as I. M. Goldberg, A. S. Novomeyskii, A. Shevalev, N. D. Nyuberg, M. M. Bougard, M. S. Smirnov, and S. G. Gellerstein appears to be gaining academic acceptance as publications are mounting in prestigious Soviet journals, such as Voprosy filosofii (No.7, June, 1973), Voprosy psikhologii (1963, Nos. 1 and 2; 1964, No. 2; 1966, No. 4) and Biofizika (1965, 10(1)).

The second type of DOP experimental work involves long drawn out psychophysical, color discrimination training. The work is tedious and requires large samples of "normals". These experiments have investigated at least 1200 normal children and adults (Razran, 1966). Even though the development of dermal-perception in subjects is reportedly slow, this type of experiment has the distinct advantage of minimizing deliberate fraud. The motivation for cheating is minimized and cheating can be detected from records of training curves and continuous observation.

Reports of both types of experimental work have been published in

in great quantity. Razran (1966, p.5) stated that he had 85 technical reports and press statements on the topic, and Naumov (1971) lists 120 published articles; this intense interest shown by Soviet researchers has encouraged investigations into the phenomena by Western scientists. Consider, for example, the work of Barrett and Rice Evans (1964), Rushton (1964), Frey (1965), Buckhout (1965), Zubin (1965), Makous (1966), Jacobson et al. (1966), and Youtz and Broome (1969).

CHAPTER III

AN ELABORATION OF PARAPSYCHOLOGY IN THE U.S.S.R. THROUGH COMPARISON

To understand the acceptance of parapsychology as a legitimate area of research in the U.S.S.R. it is necessary to present a more precise picture of various characteristics of parapsychology in the U.S.S.R. This elaboration can be accomplished effectively through a comparison of parapsychological research in the West[36] and the U.S.S.R. This comparison will focus on differences although some similarities will also be mentioned.

In discussing the differences between the parapsychological research in the U.S.S.R. and in the West (the United States in particular) it will become obvious that there are two broad categories of most concern. One category comprises those differences which are not unique to parapsychology but which are shared by other disciplines, especially psychology. The other category includes those which <u>are</u> unique to the field of parapsychology. The following comparison will not deal with these two categories separately, but will attempt to point out when differences are unique and characteristic of parapsychology or when they are shared with other disciplines.

Historical Ties that Maintain Influence

Historically, the traditions that have influenced scientific development in the U.S.S.R. differ from the West. In the West, parapsychology has traditionally been associated with religion, spiritualism, and mysticism. This link has not been broken (see for example, Wheatley,

1973). The Oxford dictionary groups the three terms, 'parapsychology', 'mystical', and 'religion' under the heading 'psychic'. In the U.S.S.R. the spirit of dialectic materialism permeates all scientific endeavor and ideological beliefs dictate scientific investigation. All of nature, including man, is understood to consist of matter, and physicalistic interpretations are sought for all phenomena. (This will be dealt with more fully in Chapter IV.) Researchers in the U.S.S.R., reflecting their belief in materialism, reject many Western formulations in parapsychology as "superstitious concepts" (Mutschall, 1968, p.1).

Rhine's view that a "...non physical mode of causality is required in psi communication" (Rhine, 1972, 107) is incompatible with Marxist-Leninist thought. In several cases parapsychology is associated with religious groups in the West. The English journal, Light, one of the oldest psychic periodicals, is still active. It is the official organ of the College of Psychic Studies and is mainly spiritualistic in orientation. A comparable example in the United States is the Quarterly Review of the Churches' Fellowship for Psychical and Spiritual Studies. One is not likely to find an article in the U.S.S.R. similar to a recent and not uncommon article by Ian Stevenson [37] on reincarnation in the Journal of the American Society for Psychical Research. According to the Newsletter of the Parapsychology Foundation (March-April, 1963, 10(2)) a primary stage that had to be passed before the start of significant research in the early 1960's in the U.S.S.R. was the "Ideological separation of scientific parapsychological studies from religiously-oriented concern with the 'miraculous' or 'supernatural', which are anathema to Marxist concepts of materialism."

Terminology

A major difference between parapsychological research in the United States and the U.S.S.R. concerns terminology. 'Parapsychology' is a Western term. In Russia and Eastern Europe, it is rarely used by scientists since it lacks appropriate meaning for them (Ryzl, 1969, p.15).[38] Soviet terms include "bioenergetics", "biocybernetics", "brain broadcasting" (Vasiliev, 1965) and "psychoenergetics" (Naumov, 1971). Western terminology reflects the emphasis on the psyche as opposed to its physical correlates. To researchers in the U.S.S.R. and Eastern Europe the study of psychical phenomena is not merely a branch of psychology but rather an independent branch of science most closely associated with physiology and related studies. For this reason Vasiliev (1965, p.5) prefers "psychophysiological" to "psychic". Mutschall (1968) writes

> There is one major point of difference between the Soviet approach to telepathy and that of most western scientists. The Russians do not accept telepathy as psychic in character. They do not regard it as a sixth sense. They want nothing to do with ESP, or as Professor L. L. Vasiliev, the foremost Soviet authority on telepathy, has said, "with any other superstitious concepts about the soul such as are exploited in capitalist countries by fervent idealists" (p.1-2).

Research Orientation

Physiological versus Psychological

The difference in terminology points to a more deeply rooted distinction. In the U.S.S.R. questions of psychic phenomena are dealt with from the perspective of physiology. Western interests have been mainly psychological, whereas, Soviet efforts have been mainly physical.[39] The emphasis on the physiological and biological perspective adopted by Soviet workers is commented on by Stanley Krippner:

> ...I am very impressed by some of my Soviet colleagues who don't seem to have much trouble explaining parapsychic events in terms of theoretical physics and systems biology. Perhaps the most adventurous of these people is V. M. Inyushin of Kazakh State University in Alma-Ata. He points out that we are already familiar with four states of matter: solids, liquids, gases and plasma. He hypothesizes the existence of a fifth state of matter, biological plasma. This type of plasma is thought to be made up of subatomic particles that exist within all living organisms and which are involved in parapsychic events (Krippner, 1973, p.110).

The bioplasma concept referred to by Krippner is a widely discussed model in the U.S.S.R. and derives primarily from the work of Professor Vladimir Inyushin and his colleagues at Kazakh University in Alma-Ata (see Dombrovsky et al., 1972; Moss, 1971, p.43). Several authors make reference to this physiologically oriented model (Rejdak, 1971, p.25; Zogu, 1971, p.23; Ostrander & Schroeder, 1970, 1971; Dean, 1973).

The physiological orientation of parapsychology parallels the directions of psychology in the U.S.S.R. Razran (1965) writes about the "preemption of psychology by physiologists" whose primary concern is the reduction of the mental to the physiological. In this connection Leont'ev (1967) discusses the inconsistency of physiological and mental as two distinct and different entities.

Pragmatic versus Theoretical

Another difference centres about the relative degree of pragmatism in the United States and Soviet efforts. The studies in the U.S.S.R. emphasize application, whereas in the West the emphasis is more with the theoretical. In the Soviet Union, there appears to be less discussion of philosophical issues like those of A. Flew, C. D. Broad, J. Ducasse, C. W. Mundle, and E. R. Dodds in the West. Practical application of

telepathy in the form of "active transmission of emotions and behavior impulses" has been a dominant feature of Russian research for many years (Ryzl, 1969). Vladimir Mutschall (1968) writes "...in relation to the increased interest in and higher priority of the biological sciences in conjunction with space research, telepathy is getting the full-scale treatment as a form of 'biological radio communication'" (p.1). He refers to its possible significance in 'interplanetary communications' or the 'guiding of interplanetary spacecraft'. Ryzl reports that "today, a number of Russian scientists are seriously considering the use of telepathy as a means for long-distance communications, especially in space flights" (Ryzl, 1969, p.16). The breakdown of entries in a recent bibliography of Soviet publications on parapsychology (Naumov, 1971) suggests a tendency to publish in journals of an applied orientation (see Table 3). Compare, for example, the number of publications in radio technology journals with those in psychology journals.

This orientation to 'practical application' has two possible explanations: (1) there is a general utilitarian trend in Soviet science, and, (2) new theoretical insights might conflict with the pervasive influence of the state ideology. Consequently a theoretical-philosophical focus is deemphasized.

It can be expected that this pragmatic orientation is not restricted to the area of parapsychology. Brackbill (1960) and Lomov (1971) emphasize that psychology in the U.S.S.R. became a direct productive force. Brackbill (1960) writes of the Soviet desire to "...maximize applicability of results to practical problems..." (p.231). Indeed, it is a concern that permeates all of Soviet science (Kasavina, 1963) and

TABLE 3

BREAKDOWN OF ENTRIES IN BIBLIOGRAPHIES ON PARAPSYCHOLOGY (PSYCHOENERGETICS) AND RELATED SUBJECTS--U.S.S.R. ACCORDING TO PLACEMENT OF PUBLICATION

Placement of Publication	Number of Entries*
Journals	
Psychology	2
Physics	1
Medicine	2
Physiology	3
Physical Chemistry	4
Biology	1
Radio Technology	10
Geology	2
Electrical Engineering	2
Books and Articles Placed in Books	54
Articles in Encyclopedias	3
Unclassified	4
TOTAL	88

*All parapsychology publications listed in Part I were used except those that were classified as "popular scientific literature".

society (Wetter, 1962).

A corollary is the Soviet focus on developing a technology for the application of parapsychology (Ullman, 1971, p.32). The American emphasis, on the other hand, is more geared toward data-gathering[40] for proof of the existence of psychical phenomena.

Research Topics

Differing subject matter for research is evident in the U.S. and the U.S.S.R. The Soviet emphasis has been, and [illegible]is, primarily telepathy. They have almost totally ignored the area of precognition which was already a prime topic for research in the U.S. in the late 1930's, under the direction of J. B. Rhine at Duke University (Rhine & Pratt, 1957). Similarly, the phenomena of clairvoyance has been underplayed and only recently has the topic of psychokinesis become important (Naumov, 1968).[41]

The use of physiological models and the stress on science as a productive force account for the restricted directions of Soviet investigations in this field. It is more difficult to find a physiological interpretation of precognition than of telepathy due to its blatant refusal to adhere to traditional notions of cause and effect. It is likely that the apparent similarity of telepathy to radio communication is more acceptable to both the scientific and general public (Ryzl, 1969). Dowsing which has immediate application potential is becoming popular for research. Naumov (1971) lists twenty-four Soviet scientific publications on the "biophysical effect" as they call it. Although the range of parapsychological interest appears to be

widening (see Table 4) in the view of some researchers, official warnings (Zinchenko et al., 1973) are imposing restrictions.

Researcher Affiliation

Leont'ev (1969) has written of "...intensified development of borderline interdisciplinary research" (p.10). Soviet parapsychology fits precisely into this category (Banerjee, 1962; Ryzl, 1969; Ostrander & Schroeder, 1970). As a research area it is caught in the overlap of biology, physiology, neurophysiology, psychology and applied fields and the Soviet approach to psi problems involves the cooperation of scientists on many different levels.

An interdisciplinary approach is characteristic of science in the U.S.S.R. moreso than for science in the U.S.A. New hybrid names that indicate the fusion of independent scientific disciplines to focus on overlapping problems or new problems that transcend particular fields are popular in the U.S.S.R. Biogeochemistry as originated by Vernadsky and his group at the Biogeochemical Institute of the Academy of Sciences at Leningrad is such an example (Dunn, 1949, p.54). Interdisciplinary cooperation is typical within established disciplines as well--specifically psychology (Brackbill, 1960, p.230).

The interdisciplinary approach is related to the procedure of communicating research results. No specific journals convey the specific parapsychology research within the U.S.S.R.[42] Soviet parapsychologists are able to publish in journals of related fields such as psychology, physiology, biology, medicine, cybernetics, education, radio communication, electronics, geology (see Table 3). Parapsychologists in the U.S., on

TABLE 4

BREAKDOWN OF ENTRIES IN BIBLIOGRAPHIES ON PARAPSYCHOLOGY (PSYCHOENERGETICS) AND RELATED SUBJECTS--U.S.S.R. ACCORDING TO SUBJECT MATTER

Part I. Parapsychology

Topic	Number of Entries		
	Academic Publications	Popular Scientific Literature	TOTAL
General	63	209	272
Biophysical Effect	25	27	52
TOTAL	88	236	324

Part II. Related Topics

Topic	Number of Entries
1. Certain Problems of Bioenergetics	41
2. Capacities of the Brain	25
3. Dermo-optic Sensitivity	120
4. Electric and Magnetic Fields of Living Organisms	22
5. The System of the Yogis	63
6. Autogenic Training	57
7. Heliobiology	51
TOTAL	379

Total of Part I + Part II = 703

the other hand, found it impossible to get published in the regular journals and started their own out of necessity.[43]

Researcher Qualification

The structured nature of Soviet society and the organization of the scientific community ensures that all those working in parapsychology hold recognized academic credentials. This is not necessarily true in Western countries, particularly in the United States. For example, W. E. Cox, an American business man, is well known among parapsychologists for his work on psychokinesis.

Research Methodology

An important distinction between parapsychological research in the U.S.S.R. and the West concerns methodology. In relation to methodology, several points can be mentioned: (1) sample size, (2) use of statistics, (3) use of animals in experiments, and (4) experiment complexity.

Sample Size

The U.S.S.R. places more emphasis on small sample studies as opposed to the large sample studies more typical of the U.S. There are no Soviet equivalents to the large scale, statistical studies conducted by J. B. Rhine and his colleagues in the 1930's and 1940's (see Rhine et al., 1940). Although there are exceptions (Novomeiskii, 1963), in the U.S.S.R. it is more common to find parapsychological studies of individuals with suspected psychic abilities than a statistical survey of large groups of people. This was true of the prerevolutionary studies with mediums, the research on telepathy and hypnosis by Vasiliev (1963) during the 1920's

and 1930's as well as research during the post 1960 rebirth of parapsychology. A typical example is what appears to be one of the more important current investigations in the U.S.S.R. (Ullman, 1971, p.6; Herbert, 1973a). These studies concern Mrs. Nina Kulagina, a woman with alleged telekinetic ability who apparently can move objects through mental exertion without recourse to muscular power. Dr. Serveiev, a neurophysiologist has worked with Nina Kulagina in various laboratory testing situations. Several authors point to the significance of Kulagina as a star subject in Russian PK research (Ostrander & Schroeder, 1970; Rejdak, 1971; Ullman, 1971b; Herbert, 1972, 1973a, 1973b). A similar example of research with outstanding individuals is that carried out in Czechoslovakia with Pavel Stepanek (Pratt, 1973).

Use of Statistics

Differences in sample size lead to differences in data-handling and the use of statistical tools. The U.S. emphasizes more complex and more refined treatment of experimental data by the use of elaborate statistical models and computers (Ullman, 1971, p.32). Soviet parapsychologists, on the other hand, use less sophisticated statistical tools[44] and concentrate on observation under carefully controlled conditions with the data often presented in tabular form (see Appendix III).

The use of unsophisticated statistics in the U.S.S.R. is not unique to parapsychology but is evident in other areas of investigation as well—notably psychology. According to Razran (1957, p.99) "...one glaring elementary shortcoming in the methods (of Russian psychology) that needs to be pointed out, ...is the very poor statistical treatment of data... Psychologists' data are often just sets of raw figures" (p.99). Similarly,

Brozak (1961) writes "Statistical treatment of (psychological) data is primitive" (p.714). The difference in sophistication of data handling is recognized in the U.S.S.R. as well (Simonov, 1970).

Experimental Complexity

Experimental designs in the U.S.S.R. appear to be less elaborate and complex than those in the West. Velinov reports some major Soviet experiments in a 1968 publication. The experimental simplicity is certainly an outstanding feature of Velinov's report when compared to experimental reports published in the Journal of Parapsychology of the same year. Again this parallels the developments in the Soviet psychology of non-complex studies relative to those in the United States. Brackbill (1960, p.228) points out that the number of variables accomodated by a particular study is generally lower in the U.S.S.R. than in the U.S.

Brackbill (1960) suggests that a major difference between Soviet and American psychology, that has received little attention is "the widespread emphasis in Soviet research on experimental replication as means of assessing reliability of results" (p.228). This emphasis on, and respectability of repetition of experiments certainly holds true for Soviet parapsychology (see Appendix III). This emphasis is evident in Western parapsychology as well and appears to be a common necessity for newly emerging areas of investigation.

Use of Animals as Subjects

The final distinction in methodology between Soviet and Western parapsychologists concerns the use of animals in experiments. The West,

especially the U.S., has shown a greater inclination toward the use of animals in parapsychological experiments than has the U.S.S.R. It is difficult to find experiments similar to those of Helmut Schmidt, or Sybo Schouten[45] in the U.S.S.R. Bechterev and Durov used a dog as the focus of much of their research in the 1920's and 1930's. However, a similar focus has not been evident since the resurgence of parapsychology in 1959, although some experimentation with nonhumans is carried out (Zinchenko et al., 1973).

The Soviet emphasis on the human as the subject of experimental research is also typical of psychology in the U.S.S.R. (Brackbill, 1960, p.227). However, the child is not so much the focus of attention in Soviet parapsychological research as it is in psychological studies. Rather, the emphasis has been on "psi" sensitive adult subjects. This may, of course, be a reflection on the degree to which the ability manifests itself in varying age groups. The latter would however, seem unlikely (Rhine & Pratt, 1957).

First Hand Impressions

In a study concerning a foreign country the ideal is personal observation. If this is not possible, as is the case in this study, the accounts of first-hand impressions have some relevance. In this vein, Ostrander and Schroeder (1970) after a tour of parapsychological research centers in the U.S.S.R. commented on what was to them a very real but subtle difference between Soviet and Western researchers.

> One can't help noticing the contagious enthusiasm of the Soviet parapsychologists, their openness to new ideas, their daring, their willingness to explore forgotten splinters of knowledge. Maybe it's the

> newness of the field there. Perhaps in America the long and unbudging hostility of academic and scientific colleagues has had a more stultifying effect on our parapsychologists than...has the outright political repression now and then faced by their Soviet counterparts.
>
> Some Communist scientists have psychic abilities which they don't mind talking about. Western researchers seem to be leery of admitting to psi talent. Almost all the Soviet researchers seem to have tried to develop a feeling for the psychic realm within themselves, much as our psychiatrists must learn something of their own complex being before they can work with others. The atmosphere in dealing with psychics is closer to that of the superb Russian music conservatories or ballet schools, with the scientists constantly seeking even better ways to improve, encourage, and enhance talents rather than the skeptical, 'Show me, and show me in my way' approach so often encountered in the West (p.259).

Summary

Sharp contrasts exist between parapsychology in the West and the U.S.S.R. At the root of the dissimilarities lie independent philosophical and ideological systems. Varying historical influences reflect other major distinctions in all phases of research. (These are summarized in Table 5.) Also noticeable are many similarities of parapsychological research with other areas of scientific investigation in the U.S.S.R. Adjustments to the requirements of scientific investigation laid down by the scientific community appear to have been made. In terms of approach to the problem, philosophical perspective, emphasis on application and research methodology, Soviet parapsychologists have complied with the standards of other contemporary Soviet sciences.

TABLE 5

SUMMARY OF DIFFERENCES IN PARAPSYCHOLOGICAL RESEARCH BETWEEN U.S.S.R. AND THE "WEST"

Area of Comparison	West	U.S.S.R.
historical ties that maintain influence	religious-philosophical (dualism mind-body dichotomy)	materialistic-rooted in concrete physical ties
terminology	parapsychology	psychoenergetics
research orientation	mainly psychological mainly theoretical	mainly physiological mainly pragmatic
research emphasis	attempts to prove the existence of phenomena	attempts to understand the 'how' of the phenomena to allow practical applications
research topics	all areas of traditional parapsychology	mainly telepathy and more recently phenomena concerning the bioplasma, PK and dowsing
researcher affiliation	less emphasis on interdisciplinary approach	greater emphasis on interdisciplinary approach
researcher qualifications	not necessarily within academic community	all within academic community
research methodology	use of elaborate statistics	nonrefined statistics or none at all
	relatively complex designs	relatively noncomplex designs
	many animal experiments	limited animal experiments; more emphasis on humans (gifted adults)

Both the historical review (Chapter II) as well as the elaboration of parapsychology as a science in the U.S.S.R. by comparison with parapsychology in the U.S. (Chapter III) have suggested some of the unique and complex factors and problems that underlie the gradual trend towards acceptance of parapsychology as a legitimate area of study. It will be useful to look at some of these factors in more detail. It is the purpose of Part II to analyze more concretely the factors which were openly or tacitly presented in Part I.

PART II

ANALYSIS OF THE ACCEPTABILITY OF PARAPSYCHOLOGY IN THE U.S.S.R.

A MODEL FOR THE TREATMENT OF ANOMALOUS MATERIAL

According to Kuhn (1970) paradigms are "universally recognized scientific achievements that for a time provide model problems and solutions to a community of practitioners" (viii). The acquisition of a paradigm is a sign of maturity in the development of a given science. These paradigms are not static but are subject to change. Successive transition from one paradigm to another via "scientific revolution" is the usual pattern of development within the scientific world. Such scientific revolutions are characterized as turning points in scientific development. They necessitate the community's rejection of an established scientific theory in favour of another incompatible with it. Such transitions are almost always accompanied by controversies. The results of such changes are a shift in the problems acceptable for study and the legitimacy of their solutions.

Any established paradigm in an area of study is relatively inflexible. The paradigm provides a criterion for choosing subjects that should be studied by the discipline. As Kuhn suggests "one of the things a scientific community acquires with a paradigm is a criterion for choosing problems that, while the paradigm is taken for granted, can be assumed to have solutions" (p.37). Other problems which may have been acceptable for study under an earlier paradigm are now rejected as

metaphysical, as the concern of another discipline, or as just too problematic to be worth the time. These "other problems" as well as newly discovered problems or "facts" which do not comply with the commonly accepted paradigm can be considered to be anomalies.

By anomalous material is meant any experimental or theoretical contributions which appear irregular, abnormal, or unusual with respect to commonly accepted standards derived from commonly accepted theoretical and experimental frameworks by a particular community. Obviously according to this definition there may be many anomalies being produced by the scientific community every day. It is therefore essential to note that some anomalies are more significant than others. The significance of an anomaly can be considered to vary on a continuum according to the following factors:

(1) The degree to which the anomalous material appears irregular, abnormal or unusual.

(2) The amount of empirical evidence collected in support of the anomalous material.

(3) How close the anomalous material strikes at the basic assumptions of the established paradigm.

Although other variables such as the number, caliber, personalities, and so on, of the people who support the anomalous material also help to determine the impact of an anomaly, they are of less concern here.

In a situation of conflict between an anomaly and a paradigm, there are a limited number of possibilities open. First of all mutual exclusion is a possibility. Secondly, mutual acceptability can be achieved. However, anomalous material cannot be incorporated into an

existing paradigm until (1) the paradigm changes in some way (expansion) to assimilate the previously nonacceptable material, (2) the anomalous material changes in some way to appear more acceptable to the old paradigm (Kuhn, 1970).

If (1) is followed, assimilation of anomalous material into an existing body of knowledge does not merely result in one added feature tacked onto the existing features of the paradigm. Rather, it requires the reconstruction of previous theory, and the re-evaluation of previous fact. This is, according to Kuhn, essentially a revolutionary process, a transition that requires much time for its completion. If acceptance of the anomalous material is to be achieved through route (2), then the threatening nature of the anomaly must be reduced to a minimal level. The contradictions that arise from a comparison of the anomaly and the paradigm must be diminished. Not until the magnitude of the difference between the anomaly and the paradigm is minimized can the anomaly be effectively incorporated.

Paradigm Action on Anomaly

A paradigm embodies a host of expectations and assumptions. When these expectations are violated by an anomaly, two possibilities exist: (1) the violation is rejected, or (2) the paradigm ceases to function and gives way to the new alternative. Rejection of the anomaly by the paradigm can be effected in several ways. If the threatening nature of the anomaly warrants such action, the anomaly could be rejected "a priori". The body of traditional science could discount the anomaly as intrinsically unsound. Secondly, if the anomaly cannot be

incorporated, it might be forgotten for some time until the paradigm is more able to deal with the anomaly or until a viable alternative paradigm appears. Polanyi (1963) has stated that science is perfectly justified in bracketing anomalies. Finally, the anomaly can be diminished through argumentation. In this way the anomaly could be discounted as unreliable due to methodological flaws, procedural weakness, experimenter bias, and so on. Thus, the violating anomaly can be discarded in the following ways: (a) rejected "a priori", (b) ignored, or (c) devaluated through argumentation.

Change of Anomaly in Reaction to Paradigm

The above paragraph emphasizes the action of the established paradigm in reaction to anomalous material. However, the latter can also be made to undergo change when it conflicts with a paradigm. More specifically several possibilities exist to minimize the extreme treatment of the anomalous material by the scientific community:

(1) Change the appearance of the anomalous material to reduce its apparent conflict.

(2) Formulation of theories to show that the anomaly has some value.

(3) Appeal to other audiences for support.

Paradigm - Anomaly Conflict

The eventuality that a new set of facts, a novel theory or innovative idea comes to a state of conflict with an established body of knowledge, suggests that a certain amount of inflexibility is characteristic of paradigms. If the innovation is anomalous to the paradigm, then the

most likely reaction is rejection of the anomalous material. Such paradigm rigidity is common (Kuhn, 1970).

Paradigm rigidity is analogous to the restricted vision of a horse with blinders bound to its eyes. The blinders, often small pieces of leather, obstruct the horse's vision to either side and have the effect of focusing the horse's visual attention in a narrow range directly in front of it. Such restricted vision has both advantages and disadvantages. The blinders prevent the horse from attending to peripheral objects that might distract it from its designated path. At the same time, the blinders limit the horse's reaction to objects or events in its vicinity that might be of importance to it, primarily because these objects and events are outside of the horse's range of vision. Although the analogy is imperfect, the focusing effect of paradigm directed science is much like the restricted vision of the horse. The paradigm defines the problems to be studied, the evaluation of what is acceptable and what is not. In science as well, inflexibility has advantages and disadvantages. Among differing schools of thought, rigidity can lead to non-constructive controversy (Krantz, 1969). At the same time paradigm rigidity appears inevitable and even necessary (Polanyi, 1946; Krantz, 1971).

If Science is fundamentally a conservative system, like any other social system, then it will in fact tend to block change rather than facilitate change. If this is so, the likelihood of anomalies being rejected is relatively high. The actual rejection of an anomaly within a discipline is dependent on the significance of the anomaly to that discipline. The significance of the anomaly in turn depends on (among

other variables mentioned earlier) the degree to which it attacks the major assumptions of the paradigm.

The illustration in Figure 1 may be helpful in elaborating the dynamics of the paradigm and the anomaly interaction. The horizontal line in Figure 1 represents the continuum of basic assumptions held by a paradigm. The end of the continuum labeled "central" represents the most deeply ingrained assumptions held. These are inherent beliefs which are often not verbalized. Rather, they are assumed through practice. Indeed, it may be that the more non-verbalized the assumptions are, the less amenable they are to change (Polanyi, 1946). Toward the other end of the continuum lie those assumptions that are more easily verbalized, less paramount, and less critical. The practitioners within the discipline are less commited to assumptions on this end of the continuum than they are to those which lie more central.

Several phenomena should be noted with respect to the concepts that Figure 1 (a) represents. First, commitment to an assumption depends on the degree of centrality that it holds: that is the extent to which it lies to the left on the continuum. However, specific assumptions are often logically interdependent just as geometric and algebraic propositions follow logically one upon another. It may then be expected that the extent of interconnection of a particular belief with a number of other beliefs will also have some bearing on the effect of an anomaly on the belief structure of the paradigm.

How then can the paradigm and the anomaly be expected to interact? Consider anomaly B (see Figure 1 (b)) which may be assumed to have the following characteristics with respect to the paradigm. B is anomalous

FIGURE 1

SCHEMATIC REPRESENTATION OF PARADIGM BELIEF STRUCTURE

Figure 1 (a)

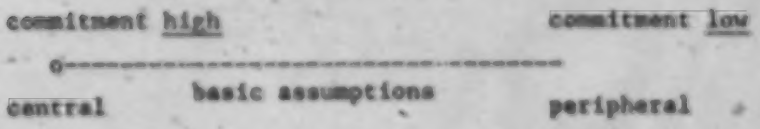


Figure 1 (b)

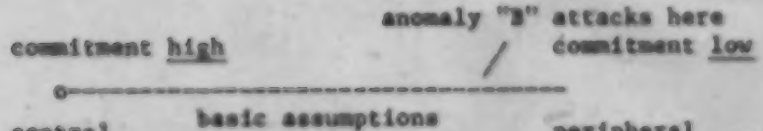
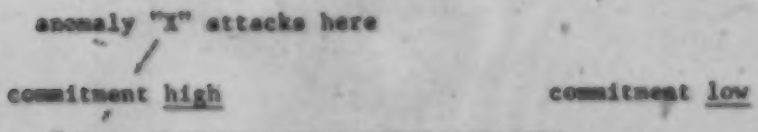


Figure 1 (c)



only to peripheral assumptions of the paradigm and the magnitude of the difference between the anomaly and the paradigm is relatively small. The anomaly consequently poses little threat to the total paradigm structure. The principle tenets of the scientific tradition remain unquestioned and the anomaly is likely to leave the paradigm fundamentally unchanged. The anomaly may even be incorporated effectively into the existing theoretical structure. Such incorporation becomes a reinforcement to normal science.

Consider now anomaly X (see Figure 1 (c)) which may be assumed to have the following characteristics with respect to the paradigm. X, unlike B, is anomalous to highly central assumptions within the belief structure of the paradigm. Unlike B, the magnitude of the difference between the anomaly and the paradigm is noticeably large. The anomaly therefore represents a major threat to paradigm maintenance. Central, implicit or explicit assumptions of the theoretical structure, are challenged. Possibly the assumptions that are questioned by the anomaly are intricately interconnected with other basic tenets within the belief structure. The effect of the anomaly may then be analogous to pulling the bottom balls out of a pyramid of billiard balls. In the face of such a threat, attempts may be made to dismiss the anomaly as intrinsically unsound, alter it in some way in order to incorporate it into the existing paradigm or totally ignore it, leaving it as an unsolved problem for future study. However, if the anomaly does indeed threaten the basic building blocks of the scientific discipline, such a solution stands a high probability of failure. The theoretical prominence of the anomaly presents a likelihood for fundamental changes within the

paradigm. Thus the more central the anomaly the more probable is fundamental paradigm change.

Parapsychology as an Anomaly

Parapsychology in general can be considered as an anomaly (Murphy, 1937; Rhine, 1954; Ducasse, 1954; McConnell, 1969). As indicated in the introduction parapsychology does not readily fit into the generally accepted bodies of knowledge and theory. Similarly parapsychological phenomena can be considered as anomalous in the U.S.S.R. Several Soviet authors have noted this difficult position in which the theories and apparent facts of parapsychology find themselves (Anfilov, 1961; Vasiliev, 1965; Mutschall, 1968). Ye Parnov, a candidate of technical sciences in the U.S.S.R., has established at least three paradoxes: (1) telepathic communication is independent of distance; (2) telepathic communication is achieved without the use of the senses and has no apparent relation to electromagnetic waves;[47] (3) some cases of spontaneous telepathy and clairvoyance contradict the law of causality (from Mutschall, 1968, p.6).

Nature of the Anomaly

In the West the anomalous nature of parapsychology is recognized primarily by the academic community. The resistance on the part of the scientific establishment towards parapsychology, which exists in most countries, is complicated in the U.S.S.R. While in the U.S. the main impediment to progress in parapsychology has been scientific community opposition, in the U.S.S.R. an additional factor has been the political posture of the state. It will therefore be necessary for a discussion

of the trend toward acceptance of parapsychology in the U.S.S.R. to look at two broad areas: (a) the attitude of the state and (b) the resistance of the scientific community. For convenience these areas of concern can be regarded as levels of interaction for the anomaly of parapsychology: (1) political level (official government stance), (2) academic level (approach of the academic-scientific communities).

A third level can be isolated; the individual level (personal resistance or acceptance on the part of individuals). However, it is beyond the scope of this study to look at the area of individual resistance and acceptance. There is an extensive psychological literature available concerning attitudinal change that is relevant but will not be dealt with here. This point is mentioned here to emphasize the importance of personal acceptance or resistance to new scientific concepts and innovations in the development of science.

CHAPTER IV

INTERACTION OF PARAPSYCHOLOGY AT THE POLITICAL LEVEL

Anomalous Nature of Parapsychology at the Political Level

The historical review in Chapter II has shown a fluctuating political attitude of the state towards parapsychology. From a period of official tolerance parapsychology slipped into an era of total rejection by the state. For about twenty years (1938-1959) political restraint exerted a greater control over parapsychology than academic resistance ever could. Not until 1959 did political forces relax their hold on parapsychology. The increasingly favorable attitude of the state in the 1960's and 1970's led to the establishment of laboratories and research units for parapsychology and culminated in a policy statement of the presidium of the U.S.S.R. Society of Psychologists favoring its study and research (Zinchenko et al., 1973).

Throughout these periods of fluctuation there has been, to varying degrees, continual claims that parapsychology is inconsistent with dialectical materialism (see for example, A. Kitaigorodsky in Literaturnaya gazeta (November 26, 1964) and Biryukov, 1961). Similarly parapsychologists have been accused of neglecting practical work and of heresy against approved philosophic principles (see N. Bechterev in Sovetsky Soyuz, 1969, No.3, p.45).

The attacks on parapsychology rooted in political ideology and the shifts in the state attitude require a closer examination of Soviet political philosophy and attitude during the historical periods outlined.

Soviet Ideology

Political thought in the U.S.S.R. is based on the philosophical tenets of dialectical and historical materialism; views greatly influenced and developed by Karl Marx, Friedrich Engels and Vladimir Ilyich Lenin. Dialectical materialism to the Soviets is not merely one of several philosophies; rather it is the one and only viable philosophy providing both a world outlook and a methodology. In this view, matter is the ultimate foundation of reality. All of nature including man consists of matter with its different properties. This concept permeates philosophical thought in the U.S.S.R. and is extended to the Soviet view of man.

Mind and Matter

Man is regulated exclusively by the properties and laws of matter according to Marxist-Leninist thought. Consciousness is therefore defined as a product, function and property of matter--the organized matter of the human brain (Wetter, 1962, p.40). This line of reasoning emphasizes that the psyche is merely an attribute of highly organized matter (Razran, 1965, p.96).

Subservience of Science to Social and Political Philosophy

Dialectical materialism is not merely a guiding doctrine or philosophy distinct from other disciplines of thought and study or from other theoretical viewpoints. Rather the doctrine of dialectical materialism is a world view that permeates all phases of communist life as a unitary method and point of view. It "...proclaims itself a doctrine of the utmost general laws of motion and development in Nature,

society, and human thought" (Wetter, 1962, p.5). The theory of Marxism-Leninism is considered to be the foundation and framework for development not only for politics but also for scientific inquiry of which the psychological sciences are merely one aspect. Scientific investigation is therefore not independent to follow its own course but is directed within the confines of dialectical materialism.[48]

The dependence of scientific inquiry on political philosophy is not only held in theory in the U.S.S.R. but is similarly carried out in practice (Sax, 1944). As Solzhenitsyn (1974) recently pointed out, the Russian intellectuals are subservient to the State ideology. He writes, "everyone who lives in our country pays a moral tax in the form of the obligatory ideological lie". Scientific inquiry is both guided and restricted by centralized planning. This lack of autonomy has in the past led to unfortunate consequences for scientific innovation as well as individual scientists. The case of the falling into disrepute of Genetics during the 1930's and 1940's in the U.S.S.R. and the resultant death of Vavilov, an internationally acclaimed geneticist, is a case in point (see Zirkle, 1949).

Unity of Theory and Practice

A key principal of dialectical materialism is the "unity of theory and practice". Ideas in the Soviet view should be taken out of the realm of pure thought and transferred to the realm of practice. The orientation of Marxist-Leninist ideology towards action is often expressed as follows: "The Marxist-Leninist theory is not a dogma, it is a guide to action" (Fundamentals of Marxism-Leninism, 1959--cited by Wetter, 1962, p.10).

Soviet Ideology and the Supernatural

Marxist-Leninist thought rests squarely on reality; on the real world in which we live. Consequently, dialectical materialism does not tolerate the existence of any supernatural forces. It does not recognize superstitious or religious imagery. Neither does Soviet ideology acknowledge a nonmaterial, spiritual world, the dwelling place of spirits, a "higher reason" or "higher will" which has prominence. A view that subscribed to a spirit would be considered idealism in the terminology of dialectical materialism (Wetter, 1962, p.18).

Space and Time According to Soviet Ideology

According to the doctrine of dialectical materialism, space and time are objective forms of existence of matter. Lenin stipulated that:

> Time is a form of existence of matter, which represents the duration and succession of material processes and expresses the objective connectedness of material motion (cited by Wetter, 1958, p.305).

Attempts to merit time with more than three dimensions can according to Lenin only lead to "spiritualism and mysticism". Time and space are intimately intertwined with matter in a real, three-dimensional world. Both concepts, time and space, therefore have the attributes of objectivity and matter.

Another basic property of time within the framework of dialectical materialism is the nonreversibility of time. Time has a concrete character and the order of past, present and future becomes an unchangeable fact of reality. A central issue is raised in a critical analysis by Wetter (1958):

> But the chief error of the dialectical materialist doctrine of space and time consists once more in the wholly unjustified assertion of Engeles and Lenin, that space and time represent basic forms of 'all being', and that a being independent of space and time would be an absurdity. Behind it there lies the usual materialist assumption that all being must be material...(Wetter, 1958, p.309; underlining mine).

This view has its roots with writers from whom dialectical materialism developed. Engeles wrote:

> The basic forms of all being are space and time, and existence out of time is just as gross an absurdity as existence out of space (cited by Wetter, 1962, p.27).

The Law of Cause and Effect

The concept of causal relationships is central to the philosophical framework of dialectical materialism. According to Soviet thought a "cause" is 'a phenomena which gives rise to another' and an "effect" is 'the result of the operation of a cause'.[49] Wetter writes:

> Dialectical materialism is a most zealous defender of the universal validity of the category of causality, and thereby of the corresponding validity of the causal principle (Wetter, 1962, p.66).

The causal law insists on natural explanations for all phenomena. This principle therefore rules out hypothesis in terms of supernatural or transcendent nonphysical forces. A consistent and thorough materialistic determinism leaves no room for miracles.

Points of Conflict

Of primary importance at the political level has been parapsychology's apparent defiance of Marxist-Leninist ideology. The anomalous nature of parapsychology with respect to the state ideology allows the elaboration

of specific points of conflict. Although the degree of incompatability is unclear the basic points of contradiction are as follows:

(1) Psi phenomena do not easily lend themselves to physical interpretation. Indeed several authors emphasize the non-physical nature of psi (see Rhine, 1954). This aspect of parapsychology falls in direct conflict with Soviet ideology.

(2) Psi phenomena stem from a tradition of spiritualism. Regardless of the scientific approach to the problem some psychical phenomena are often associated with "supernatural" explanations. Dialectic materialism does not tolerate the spiritualistic or supernatural.

(3) ESP phenomena defy traditional concepts of space and time. The phenomena are apparently not hampered by distance or time. Within the framework of dialectical materialism time and space have the attributes of objectivity and matter--anything independent of space and time is an absurdity.

(4) The concept of precognition defies the law of causality. How can an event cause anything before it has occurred? This concept is incommensurate with Marxism which is a defender of causality.

(5) Telepathy phenomena have often been interpreted as the nonmaterial transference of thought. This implies the dissociation of a mental thought from the material body. Soviet ideology adheres to the unity of mind and body in its material nature. The 'mental' is an inseparable property of matter.

Results of Conflict

These points of conflict have not gone unnoticed in the course of parapsychological history in the U.S.S.R. On the contrary they have been the focus of attention of those "pro" and "anti" parapsychological research. Specifically two reactions are noted: (1) the points of conflict gave reason for fierce attacks on the study and research of psychical phenomena, and (2) the points of conflict encouraged those active in parapsychological research to respond in ways to minimize the apparent conflicts.

Reaction of Critics

These incompatabilities of parapsychology with the philosophy of dialectic materialism have been a focus of both criticism and skepticism. Concern that parapsychology could easily get lost in the tangle of metaphysical speculations is understandable. Parapsychology would then become a major opponent of Soviet ideology rather than a productive instrument. Concern, in its extreme, has been voiced as fierce criticism. This type of reaction is apparent in the following argument:

> It is my deep conviction that the problem of parapsychology cannot, from the viewpoint of method, be posed as a scientific problem. Let me quote a basic Marxist-Leninist philosophical principle concerning the unity and inseparability of the psychic, or mental, and the physiological. Thinking is a property of brain matter and cannot be separated from it. In this light we simply cannot raise the question of separation and transfer of thoughts. If we do, we are merely reverting to the vulgar materialism of the past century, which believed the brain secreted thoughts as the liver secretes bile. In summary, the only basis for parapsychology is belief in it, or faith (Biryukov, 1961, p.12).

From the viewpoint of the above quoted critic parapsychology does not meet the criteria of an acceptable area of scientific inquiry. His solution is to ignore the problem, regardless of the evidence that may exist.

Whether the evidence that exists proves or disproves the truth of psi phenomena is not the issue. However stringent the quality of proof for psychical phenomena the subject matter remains unacceptable due to its incompatable base with the philosophical roots of Soviet ideology.

Similar criticisms attack parapsychology not on the basis of the proof offered for its existence but rather on the basis of the content of the material studied. For example, Kraizner (1961) concludes, "So far your (parapsychologists') inventions and theories are hard to distinguish from idealistic mysticism" (p.17). Dr. A. Kitaigorodsky considered parapsychology a pseudo science and those who purported to have psychic abilities he considers to be liars and swindlers. The recognition of the various phenomena of parapsychology to him would mean the collapse of his materialistic world view (Teodorovich, 1967, p.22). One writer in response to Kitaigorodsky writes in the Literaturnaya gazeta (November 26, 1964):

> A. Kitaigorodsky's argumentation is largely based on overcautiousness: as soon as it is possible to treat a question mystically, there is no need to decide it; as soon as some fact can be described as 'supernatural', it ceases to exist (cited by Teodorovich, 1967, p.23).

Similarly, Nataliya Bechtereva, Bechterev's granddaughter, who is in charge of the Department of Applied Human Neurophysiology at the Institute of Experimental Medicine, denounces telepathy. In an article in Sovetsky Soyuz (1966, No.3, p.45) she claims that telepathy is

"devilry" and that she would rather believe that creatures from space may visit earth (Teodorovich, 1967, p.23).

Often evident in such critical attacks is a degree of invective or personal attack directed at destroying the credibility of the opponent with the object of producing a change in the viewpoint of the community at large. Simultaneously such attacks often demonstrate an underemphasis on factual data or theory. In a critical letter to New Scientist, Lvov (1968) sharply attacks evidence for ESP presented by Beloff (1968). Of seven paragraphs, five can be categorized as invective. The remaining two paragraphs discuss methodology and accuse participants of experiments with fraud and experimenters with gullibility and credulousness. No data is presented. The gist of the argument can be summed up in the following exerpt.

> It is enough to return to the history of the problem to convince oneself that so-called parapsychology is nothing else but a mixture of the survival of ancient superstitions; the fanaticism and credulity of some scientists; and the direct charlatanism of mediums. Parapsychology is a sister of spiritualism. Parapsychology experiments are of no more scientific value than the phenomena of materialization of spirits observed by Sir William Crookes FRS, Sir Oliver Lodge FRS, Charles Richet of the French Academy and other famous (and deceived) scholars (Lvov, 1968, p.726).

Criticism of psi workers has existed to varying degrees in all three historical time periods documented in Chapter II. It was obvious that the new philosophical foundations that the revolution brought were not sympathetic to the spiritualistic investigations and medium sittings carried out in pre-revolutionary days. Although little actual documentation is available of the controversy of the 1920's and 1930's it is obvious from Vasiliev's (1963, 1965) accounts that criticism was

not an exceptional occurrence.

However, parapsychological research was tolerated. There are several reasons for the continued existence of parapsychological research in the face of blatant incompatability with state ideology.

1. Those interested in pursuing psi research minimized the apparent incompatability of parapsychology with Soviet ideology. The renounciation of spiritualist associations, adoption of acceptable methodologies and assertions of loyalty to dialectical materialism aided in making the anomaly appear less anomalous (this is dealt with more fully later).
2. Russia as a nation could benefit from international cooperation during this time period. This kind of cooperation was fostered by such ventures as Soviet participation in the Interpational Committee for Psychical research.
3. A subtle cultural readiness cannot be overlooked. Some authors suggest a greater willingness to accept the paranormal by the people of the U.S.S.R. (Ryzl, 1969). One author writes:

> The very nature of the Russian national character represents an important factor in the interaction between parapsychology as a science and Soviet society as a politically organized culture, for involved in it are traits which make a Russian specifically sensitive to matters relative to the mystical side of the human psyche and lead him to a restless search for the philosophical meaning of human existence.
>
> This has resulted in a nation which is particularly sensitive to transcendental, to ideas based on eternal values, to possible keys to the enigma of life, to a world beyond the sober reality of sense. It is thus only natural that an intense interest in investigations on the nature of psi phenomena can be traced far back in the history of Russia (Khokhlov, 1968, p.229).

Ryzl (1971) suggests that the Communist public has a much better attitude towards parapsychology than the Western public. He claims that they accept parapsychology more rationally and seriously, as a new science.

4. The primary factor, however, appears to have been based on the state of development of the political philosophy. From the Revolution to the period of influence of Stalin continuing opposition between rival tendencies within Soviet philosophy is apparent (Wetter, 1958). Instead of a unified philosophical directive the political atmosphere was characterized by varying opinions and conflicting schools of thought. With rivaling factions of political thought, controversy was directed among rival groups--with no unified opposition to parapsychology.

Contention and philosophical disunity came to an end with the increasing influence of Stalin. Nineteen thirty-one represents a decisive turning point in the history of Soviet philosophy with the condemnation of mechanism and Deborinism by the Decree of the Central Committee of the Bolshevik Party (Wetter, 1958). From that point on, under the Committee's direction political contention was abolished and Soviet philosophy flowed "in the narrow channel of officially prescribed opinion". Increasingly the focus became, discovering and 'rooting out' deviations on the part of individuals from the doctrines elaborated by Marx, Engles, Lenin and Stalin.

The sharpest critical reaction to parapsychology occurred with the emergence of the Stalin era. During this period parapsychology was subdued and officially quashed. There are several reasons for the suppression of parapsychology in the U.S.S.R. It may well be that one

influence in the rejection of parapsychology by Soviet officialdom is that it may be perceived as a "foreign science". Indeed much of the early Soviet research was a repetition and elaboration of European studies. A nationalistic attitude is reflected in some of the writings of the Stalin era. Another reason may have its roots in the fall into disfavor of the Bechterev's School of Reflexology. Researchers of telepathy at this time were mainly followers of Bechterev.

The primary factor, however, appears to have been based on political philosophy. The adoption of the new constitution of November 1936 which created politico-social upheaval most certainly had some effect on parapsychology. The regime called for the abolition of survivals of capitalism in the consciousness of the people and a strict adherence to the Marxism-Leninism as interpreted by Stalin. All points of conflict between psi phenomena and the dogma of the state ideology came into sharp focus. Just as psychology lost its footing due to its emphasis on theory and lack of application so parapsychology could easily have been interpreted as being contradictory to the Marxist postulate of "unity of theory and practice". The spiritualistic associations of parapsychology cannot be expected to have benefited psi workers during Stalin's special campaign against religion which was intensified in 1938. In the atmosphere of enforced adherence to rigid interpretation of Marxist-Leninist doctrine it would not be a difficult task for criticis to brand parapsychology as mysticism and idealism.

The controversy surrounding the basic issues again became prominent in the early 1960's,[50] with the reemergence of parapsychological research. On the one hand an elite group of Bechterev's followers, led by

L. L. Vasiliev, campaigned for the acceptance of the experimental evidence. On the other hand antiparapsychology attitudes condemned parapsychology as mysticism and Western idealism. Consequently parapsychology was most often dismissed as "idealistic mysticism" (Kraizmer, 1961, in Anfilov, 1961, p.17), subjectivism and deviationism (see Schafer, 1966, p.49), "impossible" (Biryukov, 1961). Those who did not dismiss and yet did not entirely accept it either, emphasized that "such work must be done along strictly scientific lines, starting from materialistic positions and discarding everything that is false or sensational" (note by Znamiye-Sila editor, cited by Anfilov, 1961, p.21).

The critics had sufficient impact that ideological conflicts were the topic of primary concern for parapsychologists in the early 1960's. The Leningrad group, for example, was primarily concerned with the question of the philosophical implications of the findings of parapsychology when it was first established (Pratt, 1963).

Reactions of Parapsychologists

Critics were not the only group to react to the apparent incommensurability of parapsychology and Soviet political philosophy; parapsychologists were equally aware of the necessity to react to the contradictions. Continual, critical self examination and adjustment has been a characteristic of the Soviet parapsychological movement. This may indeed by a characteristic of any innovative group within a hostile environment.

Aware of the points of conflict and in the face of harsh attacks

from their critics, Soviet parapsychologists responded by attempting to minimize the apparent contradictions between parapsychology and dialectical materialism. Several responses are noteable:

(1) Ritualistic assertion of allegiance to dialectical materialism.

(2) Complete renounciation of religious-philosophical associations of parapsychology.

(3) Posing research questions and employing methodologies that are in line with those employed by acceptable areas of study.

(4) Hypothesizing theories and interpretations of the phenomena that appear more congruous with the existing ideological paradigms.

Expressions of loyalty to dialectical materialism. A typical pattern in the public writings of Soviet parapsychologists is the repeated assertion that parapsychology as studied in the U.S.S.R. does not depart in any way from the guiding foundations of dialectical materialism. Such a recurring theme is especially noticeable in the publications of the early 1960's. On occasion the theme is inserted at critical points of the publication; an indispensable accessory. An example is offered by Gulyayev (1961) who, after suggesting a hypothesis for telepathy, writes:

> If we accept this viewpoint, which by the way is entirely logical and naturally materialistic, it may help us explain telepathy at some future date (p.14--underlining mine).

On the other hand large portions of some publications have been utilized

for this cause. The first chapter of one of Vasiliev's (1965) books is an elaborate declaration of his loyalty to Marxist-Leninist thought and the state ideology.

Renunciation of religious associations. Parapsychologists in the U.S.S.R. have continually been aware of the barriers to acceptance imposed by religious links to parapsychology. In a Soviet forum, Vasiliev stated,

> Everything associated with the problem is obscured by idealism and mysticism. We have always had and continue to have much downright fraud and sham, much verbiage about 'man's unknown soul' and similar rubbish. Then too, in addition to willful tampering with facts, there are many instances of unconscious deception and self-deception. I can sympathize with serious-minded scientists being against spiritualism and other pseudo-scientific humbug. All in all, it is hardly surprising that parapsychology is having trouble establishing itself in the legitimate world of science (cited by Anfilov, 1961, p.6).

In accordance with minimizing the unacceptability of parapsychology, a total renounciation of religious associations has been stressed by Soviet psi workers. They continually denounce superstition and reiterate the "liquidation of religio-mystical prejudices" and the "elimination of pseudo scientific doctrines". It is not uncommon to find comments in Soviet parapsychological literature similar to the following:

> Only the Soviet system, with its systematic mass inculcation of the achievements of dialectical materialism and the concrete sciences, has, once and for all, put an end to spiritism, as also to many other dangerous forms of superstition, by condemning their socio-political base (Vasiliev, 1962, p.108).

The above quotes appear as obvious attempts to define psychic phenomena in materialistic terms to allow inclusion of parapsychology into the

existing ideological framework. What Vasiliev refers to as "verbiage about man's unknown soul" has indeed found a very accepting audience in many Western countries where such phenomena as "out-of-the-body-experiences" are under serious investigation.[51] Vasiliev (1965) must therefore attack English and American parapsychologists "who frequently admix their parapsychological investigations with their idealistic convictions and religious beliefs" (p.5).

Utilizing an acceptable approach. Moves to make parapsychology appear to be less of an ideological anomaly have included the employment of methodologies and approaches found in other areas of scientific inquiry. As shown (see Chapter III), parapsychological research in the U.S.S.R. has taken on many characteristics common to other areas of Soviet scientific investigation. In terms of approach to the problem, research methodology and emphasis on application, Soviet parapsychologists have complied with the standards of other contemporary Soviet sciences. Starting from materialistic positions Soviet parapsychologists have utilized a physiological and pragmatic approach and as pointed out earlier characteristics of the methodology employed parallels those in acceptable sciences such as psychology.

Stress on believable hypothesis. Although mechanisms for telepathy and related phenomena are not known, working hypothesis and tentative explanations are continually put forward.[52] A unique feature of such theories is their apparent adherence to the philosophical foundations of dialectical materialism. Soviet parapsychologists in their communication continually make the point that psi is a physical energy system which

can only be understood by coming to grips with the particular bio-physical laws involved. This point is made not only in the publications but also the conversations of Soviet researchers (Ullman, 1971, p.33).

A popular hypothesis has been that psi phenomena are associated with electromagnetic radiation. The electromagnetic theory of telepathic transmission was widely publicized in Kazhinskii's Transmission of Thought in 1923 and Biological Radio Communications in 1962. Although this hypothesis has been rejected by experimental evidence in the West as well as in the U.S.S.R. (Vasiliev, 1962) the explanation has been retained by others (Kogan, 1966, 1968). According to Kogan (1967) it is the most common. The adherence to such hypotheses is understandable in the face of criticism that unknown transmission mechanisms are easily labelled as metaphysical idealism. Those opposed to the electromagnetic hypothesis take care to postulate a physical mode of transmission. Accordingly, Gulyayev (1961) offers the explanation that it is not thoughts themselves that are transferred in telepathy. Rather it is some kind of information about thoughts that is transferred, analogous to speech being the transference of information about thoughts via air vibrations.

A further example of the formation of acceptable hypotheses to interpret psi related phenomena is a postulated additional state of matter: bioplasma (see Dombrovsky et al., 1972). Bioplasma consists of particles that are charged and ionized, with free electrons mixed with them. These particles found in living organisms can arrange themselves in organized patterns creating a uniform energy network (see Inyushin, 1972). Several methods have been used to measure the

biofields in and around the living organism. Most of the work originated and carried on at Alma Ata attempts to (1) estimate the stability of the bioplasmic emissions, and their physical parameters, (2) control the bioplasmic processes and (3) ascertain how these are related to psychic conditions. Accordingly Inyushin regards telepathy as a product of resonances of the bioplasmic body (Herbert, 1972). The theory of bioplasma, through its emphasis on biophysical approaches within the framework of dialectical materialism, is gaining popularity rapidly. The acceptability of this hypothesis by the standard of Soviet ideological requirements for science has allowed the sponsorship of investigations under its protective umbrella which otherwise might not have been allowed. This is of course speculation. Such investigations might include those by Adamenko whose work has involved relating bioplasma luminescence, accupuncture points and psi phenomena for which he has designed special instruments; the Tobiscope (Adamenko, 1972) and the Biometer (Adamenko, Kirlian & Kirlian, 1972).

Resolution of Conflict

By the mid-1960's the major philosophical and ideological problems appear to have been surmounted. Ryzl writes in 1967,

> Even though parapsychology in the Soviet bloc countries has not yet found general acceptance as a distinct scientific field of undisputed value to society, the main philosophical and ideological objectives, always of overriding importance in Communist countries, seem to have been overcome (Ryzl, 1968, p.263).

With the increased priority of the biological sciences in 1963, more money filtered into the area of parapsychology. Some authors estimated the annual budget for the study of the paranormal in 1967 at 12 to 20

million rubles--13 million to 21 million dollars (Ostrander & Schroeder, 1970, p.7). Most authors suggest however that the financial hardships of Soviet parapsychologists are not very different from their American counterparts (Ullman, 1971; Ryzl, 1971). Generally by the middle 1960's political acceptance had been achieved, allowing Mutschall (1968) to write, "...today, in relation to the increased interest in and higher priority of the biological sciences in conjunction with space research, telepathy is getting the full-scale treatment as a form of 'biological radio communication'" (p.1). This is not intended, however, to imply the total acceptance of all areas of parapsychology. Indeed, as will be elaborated later, there are areas of parapsychological research pursued in the West that are not in the least tolerated in the U.S.S.R.

CHAPTER V

INTERACTION OF PARAPSYCHOLOGY AT THE ACADEMIC LEVEL

The second level of interaction that can be usefully distinguished in the discussion of the acceptance of parapsychology in the U.S.S.R. is that of the academic community. The interaction of parapsychology and the academic-scientific community is marked by continual resistance to psi workers, their empirical facts and their theoretical formulations (Anfilov, 1961; Vasiliev, 1962). This resistance has varied in intensity with historical time. For example, academic opposition to parapsychology is diminished at the present time compared to the late 1950's and early 1960's. However the opposition that remains is likely of the same nature as it has been throughout the tenure of parapsychology in the U.S.S.R. It is the nature of that resistance and the reactions of parapsychologists to it that this chapter investigates.

Anomalous Nature of Parapsychology at the Academic Level

Parapsychology has certainly been considered an anomaly of science in the West. Gardner Murphy (1968) has labelled parapsychology as "intrinsically 'anti-scientific'". Several writers have noted its anomalous nature at the academic level (Pope & Pratt, 1942; McConnell, 1969; Burt, 1972).

Similarly in the U.S.S.R. parapsychology has been considered by many as incommensurate with the existing bodies of scientific knowledge (see for example, Lvov, 1969). This could be expected to be especially

true of the area of psychology.

The attacks on parapsychology by the scientific community, and its shifting attitude require a more detailed examination of the roots of the controversy. To gain some understanding concerning the conflicts that surface in the confrontation of parapsychology and traditional science, it is necessary to elaborate some of the assumptions held by both groups. Since it would be a complex task to deal with the academic community as a whole, one segment, Soviet psychology, will be isolated for our purposes.

Soviet Psychology

Psychology in the U.S.S.R. shifted from a primarily philosophical orientation to a scientific one during the early 1900's paralleling, to a degree, developments in other countries. Soviet psychology's post revolutionary development concentrated on a rigorously scientific approach modelled after the physical sciences. Carried on in the framework of dialectical materialism, it has matured through a number of set backs into an independent science with a specific set of guiding assumptions. According to one Soviet psychologist, B. C. Ananiev, these assumptions are:

(1) Mental processes are properties of the brain, the highest form of organic matter; it is impossible fully to understand mental processes which underlie mental activity.

(2) Consciousness is a reflection of the objective world; in explaining mental processes, therefore, the psychologist must take into account the objective reality they reflect.

(3) Neural-mental activity is conditioned by the form of existence of living beings and changes, with changes in the form of existence. Therefore, the development of human consciousness is conditioned by changes in the material life of society and must be studied, not in the abstract, but in a concrete historical setting.

(4) Consciousness is formed in practical activity and revealed in the course of activity. Changes in the content and form of practical activity can, therefore, influence changes in the organization and development of mental processes.

(cited by Simon, 1957, p.8)

The development and contemporary state of Soviet psychology contains several elements that can be usefully isolated for the purpose of this thesis.

Methodology

The materialistic outlook of psychology in the U.S.S.R. allows the utilization of the same objective methods used in investigating other phenomena of nature. The key consideration in the development of such a methodology has been the state ideology. The emphasis in early years therefore was the growth of a distinct dialectical Marxian and materialistic psychology; and during the 1930's the development of a Marxist-Leninist-Stalinist psychology. Consequently, the 1950's saw the unique psychology of dialectical materialism founded in the teachings of Pavlov who equated psychology with physiology, mental with brain, and subjective with objective. The focus on Pavlov's views during the 1950's is again a reminder of the tremendous influence of the political

sphere over the academic and scientific spheres. Stalin's policy of Russification ultimately effected orders for the reconstruction of psychology as well as Soviet physiology and psychiatry according to Pavlov's teachings. The power of Soviet political pressure with respect to Soviet scientific endeavour is demonstrated in accounts of the well known "Pavlovian Sessions". There is perhaps no more overt example of State domination of academic enterprise with the exception of the purge of Soviet genetics in the 1930's and 1940's.

Psychology of the Brain Versus Psychology of the Mind

A basic principle in Soviet psychology is that the entity called mind are in reality the psychic properties of the brain--the highest form of organized matter. Dualism finds no place in the Soviet framework. Psychology in the U.S.S.R. reflects the materialistic monism of dialectical materialism. This essential feature (psychophysical monism) has been referred to by London (1949) as the "principle of psychophysical unity".

Objectification of the Subjective

A corollary to the belief in the inseparable connection of mental phenomena and the functioning of the brain is the view that they can be investigated by the same objective methods used in investigating other phenomena of nature. The materialist's view which defines the relation of mind and matter, rejecting dualism, also demands objectivity as opposed to subjectivity. Pavlov clearly states his goal as,

> ...uniting, identifying the physiological with the psychological, the subjective with the objective...is the most important task of our time (cited by Wetter, 1958, p.479).

Similarly Teplov (1952) emphasizes the strictest use of the scientific method eliminating all subjectivity. He equates Sechenov's 'objective attitude to the facts', to a 'scientific attitude to the facts'. Sechenov has written "There does not exist any mental sight as a special instrument for investigating psychic as opposed to material processes" (cited by Teplov, 1952, p.253-254). This reasoning leads Teplov to identify the mental with higher nervous activity so that even the mental is rooted in 'matter'. Such views became the official doctrine with Pavlovization during the 1950's.

"Philosophy-Free" Psychology

During the post revolutionary years up to the late 1920's the revamping of the foundations of psychology led to the removal of speculative metaphysical conceptions associated with European influences in favour of scientific materialism. The methodology of psychology became that of dialectical materialism. Teplov writes "the history of Soviet psychology is really the history of the Soviet psychologist's mastery of the Marxist-Leninist methodology...(and that) each new step forward of Soviet scientific psychology, each of its large-scale achievements, is witness to a new stage in his creative mastery of Marxism" (cited by London, 1949, p.242).

The writings of Blonskii and Kornilov were decisive contributions in the struggle against idealism and philosophy in psychology (London, 1949). Kornilov argued for the complete separation of psychology from philosophy. Physiological and neurological bases of psychology under Sechenov and Pavlov were encouraged. During earlier years (1917-1930)

many schools of thought within psychology (associated with Bechterev, Kornilov, Pavlov, Vygotskii) fought for recognition as the Marxist psychology (Razran, 1958). However, with state initiated Pavlovization in the 1950's, the physiological base of psychology was firmly established.

Structures versus Processes

To workers in the U.S.S.R. psychological data can be reduced to physiological data and mental processes to their physiological correlates. Elaborate explanations of human psychology must be made in terms of material structures rather than psychic processes. Events are viewed as components of a "whole" and it is consequently legitimate to dissect and reduce the "whole" to its component parts. This view defies the belief in the existence of phenomena which cannot be understood in terms of their parts; the "Gestalten" of Goethe.

Nineteenth Century Physics and Soviet Psychology

Many of the assumptions of Soviet psychology are founded on what Eddington considers to be the Newtonian world view. As a general philosophical standpoint it can be described as 'one-level naturalism'. This conception of the universe had a major impact on psychology in the founding years. Needless to say the "scientific" approach initiated by such men as Boyle and Newton offered powerful incentives to its adoption as a universal "cure all". The shift to the natural science strategy, as a core assumption of psychology, allowed the advantages of the experimental view of prediction and control over the uncertainty of philosophical insight. Indeed psychology modelled itself after the natural sciences, especially the physics and biology of the time (Matson,

1964) and adopted assumptions ingrained in the Newtonian world view.

Soviet psychology is primarily based on assumptions from the mechanical model of nineteenth century classical physics. Soviet psychology is a form of behavioristic orientation (Razran, 1958) and behaviorism in all its forms is still largely following the mechanical model of classical physics (Brandt, 1970, 1973; Whiteman, 1973, p.349). Several assumptions of classical physics were modelled by modern psychology in the early 1900's. Brandt has isolated several assumptions of classical physics that are also evident in academic psychology and especially behavioral approaches. Classical physics assumed (1) the "existence of an objective reality which could be described entirely independently of the subjects' who observed it", (2) the continuity of natural phenomena, (3) the possibility of the exact specification of both space-time variable and dynamic states, (4) the independence of studied events from the historical time at which they were studied, (5) the belief in metaphysical monism, (6) the assumption that "complete knowledge at a given moment in time of all natural forces and of the respective positions of all components of the universe would eliminate all uncertainty and make complete reconstruction of the past and complete prediction of all future events possible".

The mechanistic influences are not merely subtle hidden controls directing psychology in the U.S.S.R.; they are apparent (openly expressed) in the writings of Soviet psychologists. Pavlov often gave the impression that he was more aligned with mechanism than with dialectical materialism. His writings were criticized as mechanistic by other official theorists (Wetter, 1958, p.478-479). For example,

Pavlov is reported to have said after visiting a hospital patient "machines ...machines and nothing more. An apparatus, a damaged apparatus" (cited by Wetter, 1958, p.478). Pavlov sharply criticized idealism, dualism, mentalism and subjectivism.

The Newtonian model of physics which has served as a model for psychology no longer holds in the field of physics itself. Physics has matured to a model that postulates "waves", "quanta", and "indeterminacy". The "Weltanschaung" offered by contemporary physics is very different from the world view of the mechanical model of classical physics. The focal differences can be summarized under the following headings:

1. Multilevel versus one-level naturalism. Soviet psychology, following the model of classical physics, is based on the view that one complete system of laws exists for objects. This set of laws which is assumed, accordingly allows in principle the exact prediction of the outcome at any future time. Modern physics however has replaced one-level with multilevel naturalism: different laws are applied on different levels.

2. Heisenberg's Uncertainty Principle. Modern physics emphasizes the uncertainty of measurement at the level of the microphenomena. At such a level the interaction of the event being measured, the tool of measurement, and the experimenter plays an increasingly significant role. Quantum theory then is in its foundations a "direct phenomenological analysis of experimental data" (Whiteman, 1973, p.358--underlining mine). Soviet psychology (as do most branches of Western psychology) in general tends to ignore the "phenomenological" aspect of the analysis. Instead

of acknowledging the limitations of science efforts are made to 'control' the observer-observation interaction.

3. Whole versus component parts. The question raised is whether the "whole is greater than the sum of its parts" or whether study of the parts is sufficient to understand the total constellation. Contemporary physics at times adheres to the former view for the explanation of particular events. Behavioristic orientations in psychology follow the latter view in theoretical orientation and methodology.

4. Time and space. Whereas the classical nineteenth century view considers time and space as absolutes, modern physics is seeped in relativity theory. Reversed time order of cause and effect is no longer theoretically forbidden. By regarding everything in nature as being associated with a precise position and a precise time, Newtonian physics could largely ignore time. Similarly the physiologically and behavioristically oriented studies of Soviet psychology largely ignore subjective time.

5. Physical observability. Classical physics assumed that all operating mechanisms and all objects were essentially observable (in principle) if tools of observation were sophisticated enough. The wave-function in quantum theory, on the other hand, is in principle physically unobservable. It suggests only a range of probabilities.

Points of Conflict

Of primary importance at the academic level has been parapsychology's apparent defiance of the "laws of nature". The anomalous nature of parapsychology with respect to the widely accepted body of scientific

knowledge in general and with respect to Soviet psychology in particular allows the elaboration of specific points of conflict. Points of incompatability that stimulate the controversy are sometimes openly expressed but most often tacitly conveyed in the literature. Although the degree of incompatability is unclear the basic points of contradiction are as follows:

1. Psi phenomena are historically rooted in spiritualism and branches of psychical research in Western countries still retain spiritualistic ties. Soviet psychophysical sciences and the philosophy of dialectical materialism to which they are intimately bound, are averse to supernatural and spiritualistic interpretations.
2. Whereas parapsychology is historically rooted in dualism (mind-body dichotomy), psychology within the U.S.S.R. adheres to psychophysical monism.
3. Contrary to the goals of "philosophy free", strict, scientific inquiry approach of Soviet psychophysical sciences, parapsychology is steeped in philosophical discourse.
4. Psi phenomena's independence of time and distance contradict the classical conceptions of time and space adopted by psychology from nineteenth century physics.
5. The concept of precognition challenges causality and determinism ingrained in Soviet psychophysical sciences.
6. Psi phenomena are in opposition to contemporary psychophysical interpretations. There are no known sending mechanisms or receptors for "psi" energy.

7. Psi phenomena do not lend themselves to easy interpretation and explanation within materialistic-physiologically oriented framework of Soviet psychology.
8. Science, as yet, knows of no mode of transmission for parapsychology. There is general agreement that a physicalistic interpretation, demanded by state ideology, would require the discovery of a new form of energy. Non-energetic explanations (such as "resonance theory"--see Whiteman, 1973) which are simultaneously acceptable to quantum theory and unacceptable to classical physics are likely to be refuted by Soviet psychology.
9. Reproducibility of experiments is essential to scientific methodology. Psi experiments in the U.S.S.R. (as well as the West) have not demonstrated a high degree of repeatability.

It is clear from the above that Soviet psychology and Soviet parapsychology are proponents of conflicting views which are to some degree at cross purposes. The two sides differ in the non-empirical assumptions that lie at the root of their views. The solution to such a problem is not easy. The viewpoints are difficult to bridge in that they are, as has been pointed out, to a degree incommensurable. In the first place, the problems that are seen to be important by Soviet psychologists and Soviet parapsychologists, differ substantially. Must a theory of man include the concept of nonsensory biological communication over a distance? If the framework of the parapsychologist is excepted, the question is no longer relevant and can be disposed of and replaced by another more useful question. The following question serves as another example: what is the greatest time differential possible between

the precognized impression and the actual event? Such a question is meaningless to the Soviet psychologist who adheres to the concept of causality. On the other hand, the question is logical to a parapsychologist, since it is consistent with his views.

Secondly, new terms are established and old terms are used in new ways. This leads to misunderstandings between parapsychologists and others. As Kuhn (1970) points out, the layman could easily scoff at Einstein's general theory of relativity, because space could not be "curved". The differences between Soviet parapsychologists and psychologists in their conceptions of space and time, can only hinder mutual understanding. Communication between an anomalous system of theory and fact, and the established view, is inevitably partial.

However, the most striking incompatability between Soviet parapsychology and Soviet psychology is, that adherents of these views practice in different worlds. One adheres to causality and determinacy, the other espouses independence of time through the concepts of precognition. While to one space is a relatively well defined parameter, when related to modes of communication, to the other distance, is of little consequence in communication. In one, man is limited to his five senses. The other postulates a world of sensory input and transmission beyond known psychophysical laws. Practicing in different worlds, the adherents of these two perspectives see different things when they look from the same point in the same direction.

Several of the conflicts with respect to parapsychology and science in the U.S.S.R. are also apparent in the West. The incompatability of parapsychology with Western psychology in specific and science in

general have been noted by Broad (1953), Price (1955), Meehl and Scriven (1956), Rhine (1956), Hansel (1966), and Burt (1972).

There are two primary reasons for the conflict and apparent incommensurability: one derives from the restrictions imposed by the assumptions of dialectical materialism as they manifest themselves in Soviet psychology, and the second derives from the restrictions imposed by the assumptions of nineteenth century physics which has provided a model for Soviet psychology. The first has already been dealt with (see Chapter IV). The second is briefly elaborated here.

Reasons for Conflict

Parapsychology challenges the foundations of Soviet psychophysical sciences modelled after classical physics. However, the concepts of "psi" do not appear to contradict as overtly the "Weltanschaung" of modern physics. The concepts of "waves", "fields", "quanta, "cooperative phenomena" and "indeterminacy" of modern physics, unlike the mechanical model of the nineteenth century, are compatible with the reasoning required for psi.

Several have written of the reconciliation of psi and physics (Chari, 1972; Firsoff, 1974). Whiteman (1973), for example, discusses the overthrow of "classical ontology" by the quantum theory of modern physics and its relevance to parapsychology. He concludes that:

> ...there is an intimate epistemological relevance of quantum theory, rightly understood, to the problem of providing a scientifically acceptable conceptual framework within which parapsychological phenomena make sense as part of nature and human life in their entirity (Whiteman, 1973, p.357).

In Gerald Feinberg's (a physicist at Columbia University) view, modern

physics, "instead of forbidding precognition from happening, has sufficient symmetry to suggest that phenomena akin to precognition should occur..." (cited by Panati, 1974, p.2).

According to physicists, quantum theory is an explicit illustration of how notions of psychical phenomena are perfectly feasible. Although conspicuously impossible in an older world view such phenomena yield to ready incorporation into a newer, enlarged, more encompassing paradigm. Even the apparent contradictory nature of precognition dissipates according to modern theory. To many physicists in the U.S.S.R. the concept of causality is no longer valid in the sphere of micro-physics (Wetter, 1966, p.67). This is a logical trend in that quantum and relativity theory no longer exclude the reversed time order of cause and effect. Understandably the denial of such principles as causality and determinism which are central to dialectical materialism demands a hostile attitude not only toward parapsychology but also quantum physics and relativity theory. (For a discussion of the conflict between theories of modern physics and state ideology, see Wetter, 1958, p.405-432.)

Consequently many modern physicists appear to be more prone to take an interest in psi experiments than psychologists (Murphy, 1968). A recent example of such interest is evident in the 23rd Annual International Conference at Geneva held by the Parapsychology Foundation in August of 1974. The theme for the conference was "Quantum Physics and Parapsychology". The ten participants from five different countries were physicists intrigued by the relationship of parapsychology to contemporary physics. A preliminary report of the conference is offered

by Panati (1974).

Psychology, operating according to the nineteenth century model of physics indicates a time lag. Such a cultural lag is not uncommon (Kuhn, 1970) and specific examples are on record (Garfinkle, 1973). This "time lag" is a major factor in the apparent unacceptable nature of parapsychology with respect to the academic community and especially Soviet psychology. It is the physics of the nineteenth century, persisting in terms of current time-space patterns and views of causality, that tend to make the phenomena of psi "impossible".

Results of Conflict

The points of conflict between parapsychology and Soviet academic psychology have not gone unnoticed. On the contrary they have been the focus of attention of those "for" and "against" parapsychology. Those "anti" have criticized "psi" research both mildly and harshly; at times giving subtle warnings at other times openly denouncing. Parapsychologists and those considered "pro", on the other hand, have reacted noticeably in ways to make psi appear less unacceptable and more desireable as an area for serious inquiry.

Reaction of the Critics

Criticism of psi investigation has varied along several continuum: fair to unfair, mild to harsh, realistic to unrealistic, positive to negative, constructive to unconstructive, scientific to unscientific. Although criticism is justified in any field of scientific endeavour, much of the criticism levied at parapsychology in the U.S.S.R. has been extreme. If it is true that the severity of the reaction of adherants

to an existing paradigm is proportional to the degree to which the anomaly threatens the existing paradigm, then the criticism directed at parapsychology is understandable.

Criticism of parapsychology has varied in kind (Ransom, 1971). Some of the more revealing kinds are characterized by brutal attacks on parapsychology and parapsychologists alike. Such attacks, often unjustified, are not uncommon. A review of early criticisms of parapsychology in the West (Pope & Pratt, 1942) reports on 59 critical articles primarily by members of the psychological profession during the period 1934 to 1942. According to Pope and Pratt, criticism was characterized by "explicit statements of condemnation" (p.76), was generally destructive, and "presented in a manner to obstruct and weaken the research" (p.185). They divided the criticisms into three main groupings: (1) those concerned with the evaluation of ESP results with respect to quality of the statistics used, (2) those concerned about the adequacy of experimental procedures, and (3) those concerned with the logic of the ESP hypothesis. Pope and Pratt suggest that many were unjustified attacks, often expressed with an "air of finality" and based on little exposure to parapsychological experimentation or literature. A similar phenomena has occurred in the U.S.S.R.

In the U.S.S.R. much criticism can be viewed as an attempt to discard the violating anomaly: parapsychology. These elimination attempts are of three varieties: (1) devaluation of parapsychology vis a vis argumentation, (2) snubbing parapsychology through disregard and remaining unacquainted and uninformed of psi research, and (3) both tacit and open <u>a priori</u> rejection of the possible existence of

parapsychology. The remaining alternative is to take the possibility of parapsychology seriously and investigate the evidence for its validity.

Although there has been limited acceptance of parapsychology by the Soviet academic community, criticism has abounded. The expression of critical attitudes is similar to that in the United States. One American parapsychologist who has made several trips to the U.S.S.R. writes:

> I think there is the same kind of polarity among their scientists as we face here (concerning the acceptance of parapsychology) (Ullman, 1971, p.32).

He relates a personal account from one of his visits:

> ...the reaction when I gave the talk (on parapsychology) before a group of psychiatrists and psychologists wasn't any different than I'm accustomed to at home (U.S.A.) (p.32).

New areas of investigation require new methods and a specialized technology. These are continually being developed in Soviet parapsychology (see Adamenko et al., 1972; Adamenko, 1972). However, new approaches in parapsychology find more than their share of criticism (Vasiliev, 1962). The approach taken by parapsychologists has often been considered not scientific (see Lvov, 1968). Consequently scientists are "sceptical and doubt the reliability of the results obtained" (Naumov, 1968, p.42). If the rigidity of a paradigm refuses to acknowledge an innovation that is highly foreign and threatening then it is understandable that new methodology associated with the innovation can be viewed (by adherants of the paradigm) as "lack of" methodology.

> To sum up, not only do we lack a scientific approach to analyzing the mechanism of 'telepathy' we also do not know of any material phenomena which might explain it (Livanov, in Anfilov, 1961, p.15).

It is significant that few scientists appear to be willing to carefully evaluate for themselves the experiments of parapsychology researchers. Although the far reaching implications of parapsychological "facts" are widely recognized, they are largely ignored by the scientific community. Meehl and Girden write in the Encyclopedia Britannica:

> For the most professional scientists, parapsychology is of little interest; very few are acquainted with the research (p.322).

This situation described by Meehl and Girden appears to be true of the U.S.S.R. as well (see Vasiliev, 1962; Naumov, 1968).

Strong reactions of Soviet critics to parapsychology have been evident. One such reaction is based on the accusation of fraud. The accusation of deliberate or unintentional fraud with respect to parapsychology has not been a rare occurrance in the U.S.S.R. (Kogan, 1967, p.142). Such a reaction is exemplified by such articles as "We are made fools of" by L. Teplov (1965) and "ESP and Soviet scepticism" by V. E. Lvov (1968). The question of "fraud" is unsurmountable, since the critic can always claim that the <u>possibility</u> of fraud exists no matter how refined the experimental technique.

It not only seems that the onus is on parapsychology to present reliable proof for its existence but also the criteria whereby its proof is judged appears to be more stringent. Single-experimenter research, legitimate in other branches of study, may be considered dubious in psi investigation due to the "possibility of fraud".

Accusations of fraud, similar criticism and academic noninterest in psi, may indicate a priori rejection of the possible existence of parapsychology. In fact several Soviet academicians "reject the very possibility of telepathic phenomena and are opposed to studies in this field" (Naumov, 1968, p.42). Kraizmer (1961) dismisses parapsychological facts as "idealistic mysticism". A. Kibayagorodsky openly rejects the possibility of psi phenomena, calling its investigation a pseudoscience aligned with religion (cited by Teodorovich). Similarly, Biryukov (1961) has written that telepathy is impossible. These arguments suggest that the antecedent improbability of parapsychological phenomena is so high that no amount of evidence for the existence of the phenomena would be considered convincing.

Denial of an occurrence due to its unlikelihood according to existing views and without regard for reported evidence has not been restricted to the U.S.S.R. In the West, D. O. Hebb has written:

> Personally, I do not accept ESP for a moment, because it does not make sense. My external criteria, both of physics and physiology, say that ESP is not a fact despite the behavioral evidence that has been reported (Hebb, 1951, p.45).

Similarly, Price (1955) stated openly that he would rather accept that the results of psi research were due to fraud than allow for the possibility of its existence. Although he later retracted his accusations and made a formal apology to psi researchers (Price, 1972) the event is indicative of academic conservatism and overt resistance to claims that genuinely conflict with the intellectual heritage of most psychologists.

Vasiliev (1965, p.121) suggests that Price's article "...is

characteristic of those (in the U.S.S.R.) who, at the present time, deny the possibility of mental suggestion". Vasiliev strongly criticizes those in the scientific community who (a) "...deny a priori the possibility of such 'incompatibles' (parapsychology) in the field of psychophysiology, which is a considerably less fully explored, and an immeasurably more complicated branch of knowledge than physics" (p.120) or (b) attribute all the evidence to "... the possibility of premeditated fraud and self-deception..." (p.120).

An easily assessible example of such strong reaction by a Soviet critic is found in a letter to the editor of the New Scientist (Lvov, 1968). Although strong accusations of fraud are made, no evidence is presented to substantiate the claims. Rather, the argument is bolstered with invective and phrases such as "phoney character of parapsychology" and "trick method". Of seven paragraphs only two deal with a discussion of psi data. He concludes:

> Inventing new words with Latin and Greek roots is the only scientific contribution made by contemporary parapsychologists (p.726).

The tone of the Soviet critical milieu encouraged the editors of the Soviet periodical Nauka: religiya (1965, No.7, p.63) to write:

> Scientists studying (parapsychology)...are not infrequently subjected to unjustified attacks, and need great civic courage in order to defend their right to study such phenomena (cited by Teodorovich, 1967, p.24).

The opposition faced by Soviet parapsychologists is reported to be heavy (Beloff, 1969).

Criticism is generally recognized as a useful and even necessary element in the growth and elaboration of innovative thoughts and developments. Criticism of the type elaborated above however would

appear to be of little value to the adherants of parapsychology. The drain on time and energies of psi researchers required to answer such critics would most likely not be viewed as constructive on the long run. Secondly, lack of constructive critical input from nonparapsychologists in the academic community can be viewed as a negative aspect.

One might easily conclude that the strength and vehemence of the reaction to parapsychology seems out of all proportion if the work is valueless. This may indeed by the case. However, such conclusions, accurate as they may be, do not contribute insight into the causes for such reaction and most certainly do not justify such reaction.

The harsh reaction to parapsychology could be interpreted as a defensive reaction on the part of the critics who feel threatened by the novelty of such revolutionary views. Such a view would be consistent with the inherent conservative element of individuals and institutions. However, the resistance to parapsychology would seem to go deeper than that.

The "facts" of parapsychology do not merely invite the Soviet scientist to add a new component to his theoretical formulations. Rather, parapsychological "facts" demand that the individual scientist regards man and nature in an altered way: a way that is uniquely different from a previously held perspective. Consider, for example, what acceptance of parapsychology would mean for psychologists in the U.S.S.R. Until the Soviet psychologists have learned to see nature in a uniquely different way, the assimilation of the anomaly of parapsychology into the body of normal psychology is not complete. For the

Soviet psychologist the demand for the acceptance and assimilation of parapsychology recuires that he associate himself with subject matter that has deep roots in spiritualism and dualistic "idealism". Contrary to the ideology of the State and his profession, he must deal with concepts not easily interpreted within the materialistic-physiologically oriented framework of Soviet psychology. Perhaps more crucial, he must give up his strict adherance to causality and determinism which are ingrained in the Soviet psychophysical sciences for a world in which precognition allows one to somehow capture an event before its occurrence. Similarly, his historically useful and comfortable conception of space must be radically expanded in view of phenomena such as telepathy which do not appear to recognize distance.

Thus parapsychology's insistance on acceptance in the milieu of Soviet psychology demands a reconstruction of the field of psychology in the U.S.S.R., a revision that changes some of the field's most elementary assumptions.

Reactions of Parapsychologists

Parapsychologists like the critics have been forced to deal with the incompatabilities of psi phenomena and the assumptions traditionally held to be true in Soviet psychology and the Soviet sciences.

Aware of conflicts and in the face of harsh attacks from critics, Soviet parapsychologists attempted to gain recognition by strengthening their evidence and by minimizing the apparent contradictions between parapsychology and established academic views. Reports of parapsychologists are marked by heightened sensitivity to criticism. Such sensitivity would seem to be a prerequisite for continual critical

self examination and adjustment on the part of the innovative movement within a hostile environment.

Attempts to minimize the conflicts of parapsychology with traditional academic views are evident in the literature. Several responses may be noted:

1. Parapsychologists in the U.S.S.R. have taken every opportunity to renounce the religious-spiritualistic associations of parapsychology. In symposia, lectures and papers directed both to the public and the academic community, parapsychologists have continually denounced spiritualistic ties. (Some examples have been offered in Chapter IV.) This defensive reaction appears to be less prominent in contemporary literature than it was in other historical periods (e.g., the early 1960's).
2. Continual efforts have been made by Soviet parapsychologists to define psi phenomena in materialistic terms within the academic context. The assertions of allegiance to dialectical materialism have at times appeared ritualistic (for examples, see Chapter IV).
3. Soviet parapsychologists have adopted the widely accepted "scientific" approach as defined by other Soviet sciences to psi investigation. This has been manifested in two ways: (a) by employing methodologies common to other Soviet sciences (see Chapter III), and (b) by emphasizing hypotheses which are understandable within a traditional context (i.e., "biological radio communication"). However, Soviet parapsychology in recent years is demonstrating an increasing degree of independence in these two areas. Instrumentation, such as Kirlian photography, was utilized by parapsychologists before

it was put to use by physiologists and psychologists. Similarly, revolutionary hypotheses, such as the concept of bioplasma, are currently being initiated by Soviet parapsychologists. Such increasing independence may be a function of increasing respectability of parapsychology in Soviet Science.

4. Soviet parapsychologists have traditionally ignored the phenomena of precognition, a concept in which conflict with traditionally held views are focused most sharply.
5. Soviet parapsychologists have appealed to audiences other than the Soviet academic community. Already during the early 1960's communications existed between Soviet psi researchers and those of other countries (see Ryzl, 1961; Bannerjee, 1962; Pratt, 1973). In the face of hostility Soviet parapsychologists have received encouragement from foreign parapsychologists.

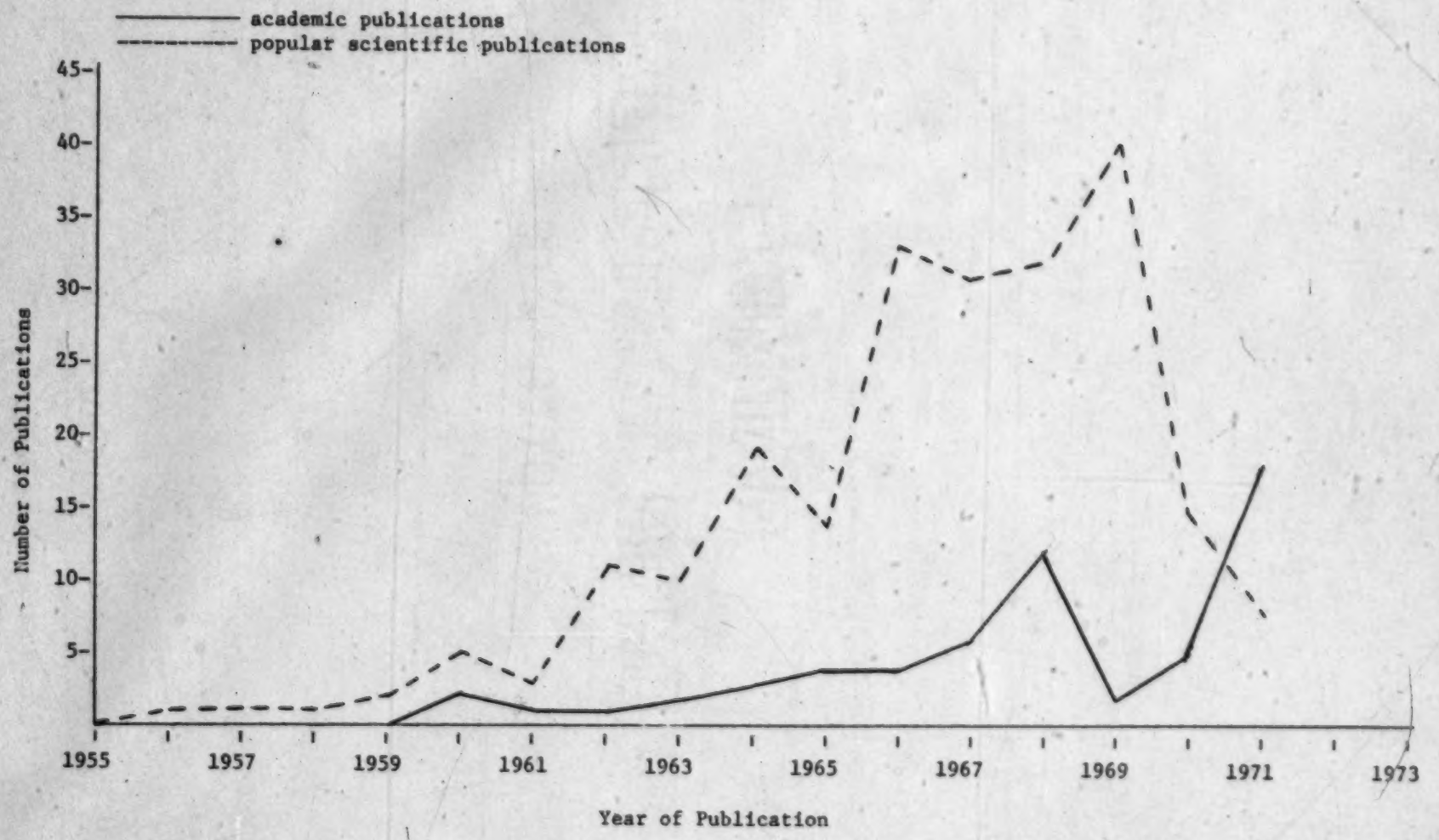
Even within the confines of the U.S.S.R., parapsychologists have not restricted their appeal to psychology. Rather they have emphasized multidisciplinary appeal which has resulted in an interdisciplinary approach to the problems of psi (see Chapter III).

A third audience that has been sought is the nonacademic and nonscientific public. This is evident when publication trends are considered. A graphical representation of frequency counts of "academic" publications versus "popular" publications as listed in a recent bibliography of Soviet parapsychology is revealing (see Figure 2). The authors of the bibliography list under the heading of "parapsychology" a total of 324 publications. Of these 88 are found in academic journals or are books considered to be "academic" and 236 can be classified as

FIGURE 2

PARAPSYCHOLOGICAL PUBLICATIONS OF "ACADEMIC" VERSUS "POPULAR" NATURE IN THE U.S.S.R.: 1956 to 1971

(For raw data, See Appendix 6)



popular scientific literature. According to the graph (Figure 2) the solicitation of popular support reached its peak in 1969. From that year on to 1971 there is a decline of number of popular publications with the 1971 total being less than any and all preceding years back to 1962. Nineteen seventy-one also distinguishes itself as the first year since the rebirth of parapsychology in the U.S.S.R. in which academic publications outnumber popular publications on the topic of parapsychology.

If the decline in number of popular publications and an increase in the number of academic publications is a significant trend, it may be caused by two factors. Greater academic recognition in recent years will presumeably increase the number of academic publications. Secondly, Soviet parapsychologists have been forced to deal with criticism from the academic community concerning their appeal for popular support through popular articles. A recent criticism of this type has been levied against parapsychologists by high ranking Soviet psychologists (Zinchenko et al., 1973). The popular appeal of parapsychology has consequently had both good and bad effects for the psi movement. Although it satisfied parapsychology's need for an audience, at the same time it has created another obstacle (in the form of academic antagonism) to overcome while on the road to full admission to the scientific mainstream. Academic antagonism toward parapsychologists for catering to the public forum is evident in the following statement of four prominent Soviet psychologists.

> We hold the practice of publishing sensational information on parapsychology, information lacking any scientific basis, in newspapers, magazines, and popular books cannot be tolerated. Traditionally, serious scientific accomplishments are presented first in the specialized scientific

> publications and only afterward in the popular press. This tradition, which self-respecting scientists normally follow, is being broken (Zinchenko et al., 1973, p.17).

Current Trends

Although there is insufficient data to substantiate a downward trend in publications of parapsychology and related subjects, the graphs are suggestive. This would not be surprising if the reports of Western parapsychologists, who are actively involved with parapsychological activities in the U.S.S.R., can be taken seriously. In such complex and uncharted topics as parapsychology in the U.S.S.R., it is useful, if not necessary, to rely in part on the impressions of observers most intimately connected with the subject matter through first hand experience. One such observer writes that,

> ...recent political developments in the U.S.S.R. have again interfered to some degree with the growth of interest there in ESP (Pratt, 1973, p.55).

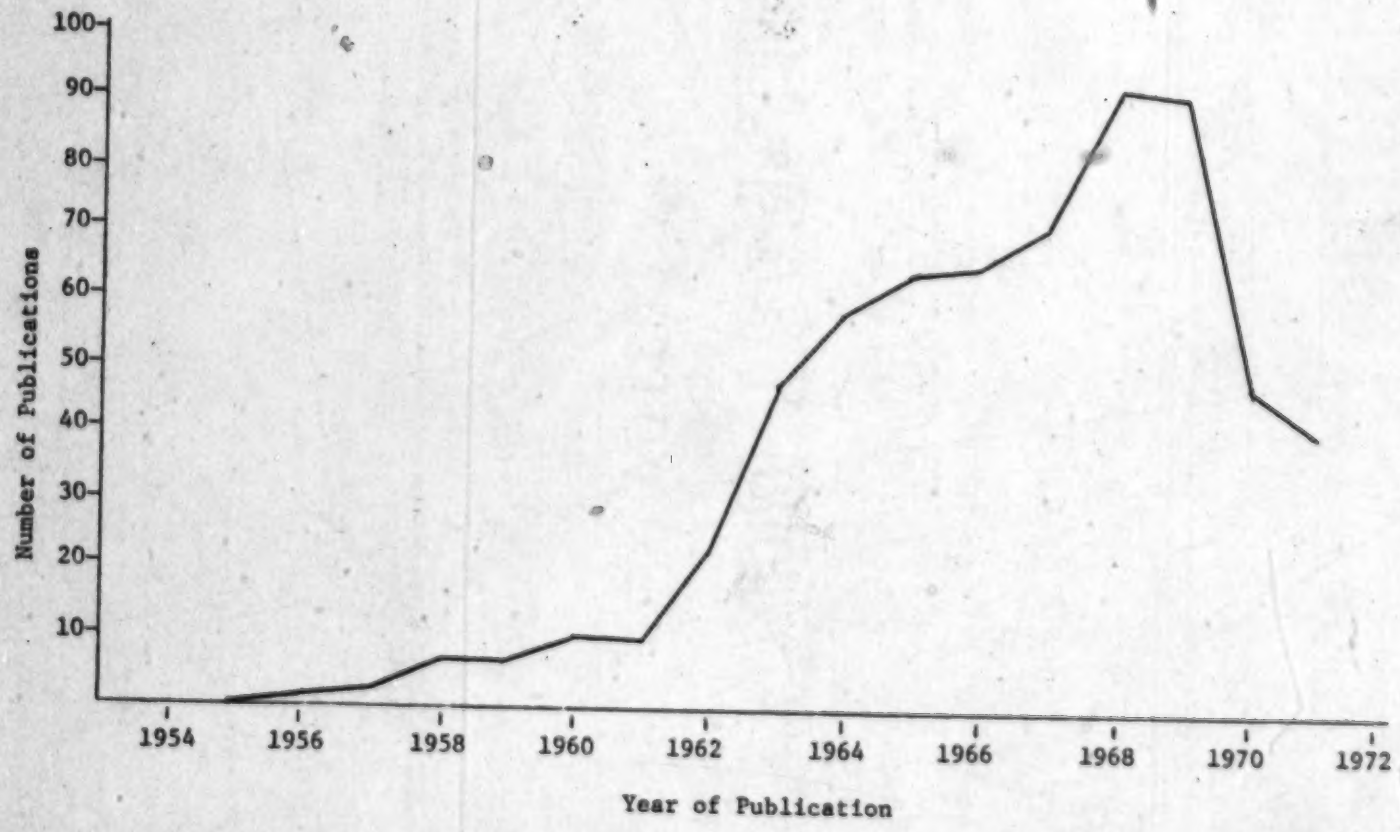
At least one other highly respected Western parapsychologist who has frequently travelled to the U.S.S.R. and maintained regular contact with Soviet researchers has confirmed this impression (personal communication). The fall in number of publications in parapsychology and related subjects (see Figure 3) may be one of the few visible indicators of a more rigid official attitude.

However, this is not to suggest that there is an attempt at total and complete reversal of the established trend toward acceptance of parapsychology. On the contrary, a 1973 policy statement of the presidium of the U.S.S.R. Society of Psychologists endorsed further research into psi phenomena. Representatives of the Society write,

FIGURE 3

NUMBER OF SOVIET PUBLICATIONS (1954 to 1971) IN PARAPSYCHOLOGY AND RELATED SUBJECTS PER YEAR AS LISTED IN SOVIET BIBLIOGRAPHIES ON PARAPSYCHOLOGY (PSYCHOENERGETICS) AND RELATED SUBJECTS, MOSCOW, 1971.

(For raw data, See Appendix 4)



> Certainly the time has come to bring order into scientific research and study of the factual phenomena described by parapsychologists. Since much of the research in parapsychology is being done by physicists and engineers, it would be proper to assess at the Institute of Biophysics and the Institute of Information Transmission (Communications) of U.S.S.R. Academy of Sciences the direction and the scientific level of the study of the biophysical effect (dowsing), of electromagnetic fields generated by living organisms as a possible means of biological communication, and of many other phenomena. If attention is paid to these phenomena from the point of biophysics and the theory of communication, it will help to demystify them.
>
> The psychological institutes of the U.S.S.R. Academy of Sciences and of the U.S.S.R. Academy of Pedagogical Sciences and other psychological institutions should also consider the possibility of mounting programs of strictly scientific research into these phenomena. It seems that it would be advisable to organize a laboratory within one of the psychological institutions to study individuals who in fact do possess unusual capacities (not necessarily paranormal ones). ...We believe that the attention of serious scientific organizations to phenomena described in parapsychology will help to uncover their true nature...(Zinchenko et al., 1973, p.17).

Inferences of current political harrassment and simultaneous policy statements advising further research are conflicting at first glance. It is difficult to conceive of official impediments simultaneous with official statements of the U.S.S.R. Society of Psychologists urging the establishment of new research programs for parapsychology. To unravel this apparent contradiction, it is instrumental to look more closely at recent publication trends.

Figure 4 graphically represents a finer breakdown of data presented in Figure 3. Figure 4 graphically represents the number of parapsychological publications and the number of publications in related borderline areas that are listed in a recent Soviet bibliography. Although there

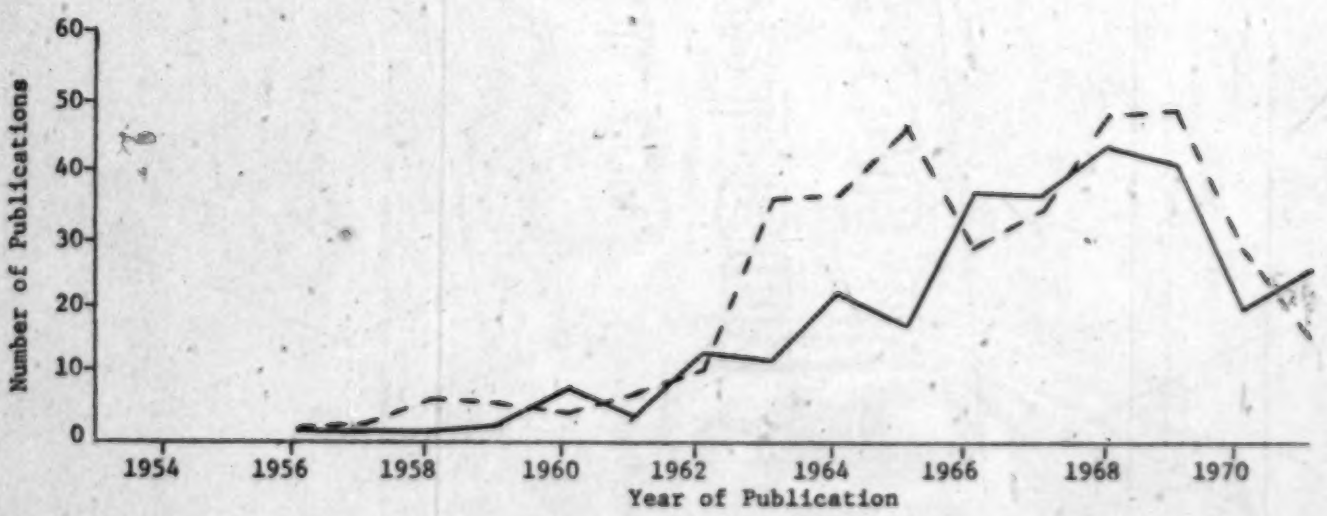
FIGURE 4

NUMBER OF SOVIET PUBLICATIONS (1954 to 1971) IN PARAPSYCHOLOGY AND RELATED SUBJECTS PER YEAR AS LISTED IN SOVIET BIBLIOGRAPHIES ON PARAPSYCHOLOGY (PSYCHOENERGETICS) AND RELATED SUBJECTS, MOSCOW, 1971.

(For raw data, See Appendix 4)

———— parapsychological publications only

---------- publications of related subjects only



is insufficient data to establish the upward trend of the number of parapsychological publications in coincidence with a downward trend of number of publications in related areas, this may indeed be something to watch for in the future. Within the framework of the model presented earlier, it is consistent to expect that there would be less academic resistance towards long standing topics of parapsychology such as telepathy than toward related areas that strike more directly at the core assumptions held by traditional Soviet psychology. If the scientist does research because of his commitment to the basic assumptions of his paradigm, then attacks on those central assumptions are less likely to be tolerated. Assuming this to be true, it would be expected that concepts such as telepathy or bioplasma, for which attempts have been made to relate them to matter and energetics within the materialistic ideology, may be perceived as less of a threat to those assumptions which have a higher commitment than some other related areas. Topics dealing with Out Of The Body Experiences, poltergeist phenomena, glossolalia, and similar research areas appear to be more anomalous in that they present more visible contradictions to the basic tenets of Soviet psychology. Unless these fundamental contradictions (which have been outlined earlier) are resolved, assimilation of such research areas into the main thrust of Soviet psychology appears impossible.

Theoretical expectation appears to be supported by events in the U.S.S.R. A recent official affirmation of the necessity for parapsychological research by four leaders of contemporary Soviet psychology (Zinchenko et al., 1973) is at the same time heavily weighted with warnings against labeling "imaginary 'supernatural' phenomena" as

parapsychology. The warning is levied not only at those areas of research which are considered inadmissible, but also at contemporary Soviet parapsychologists who have shown concern for such areas. Thus on the one hand those areas which are less threatening are being permitted as borderline research areas for normal science. On the other hand, a strict taboo is placed on several related areas which pose a greater challenge to traditionally acclaimed generalizations.

In summary, academic acceptance by the official scientific organization of Soviet psychologists indicates that scientific resistance is giving way, allowing a degree of assimilation of parapsychology. However, this assimilation is restricted and the parapsychological topics sanctioned for legitimate research by no means cover the whole spectrum of phenomena considered to be parapsychological. Only select topics are admitted: ESP, PK, dowsing, paradiagnostics, paramedicine, and psychophotography (Zinchenko, 1973). The same prestigious scientific body that sanctions admittance of certain psi topics, at the same time harshly attacks those who would include other topics.

Portions of the range of phenomena continue to pose a threat to regular science. Subject matter associated with parapsychology throughout its history and continually studied in the West (for example, survival after death, out-of-the-body-experiences, poltergeist phenomena, several mediumistic phenomena, glossolalia, xenoglossy, reincarnation, etc.) are difficult for Soviet ideology and Soviet psychological perspectives to absorb without making elaborate and fundamental alterations.

Only when the scientific and political structure can no longer

avoid the anomaly that undermines the established Weltanschaung are efforts made to initiate investigations that could lead to new assumptive commitments. Although some anomalous facts of parapsychology have achieved the status of demanding the attention and consequent adjustment of traditional Soviet Science, others have not. Those that have not, continue to violate deeply rooted assumptions and consequently elicit continued resistance. The degree of resistance encountered may in turn be proportional to the degree of commitment attached to the assumptions that are threatened by the anomaly. The substantiation of this claim could be the goal of future research.

"Facts" and the Parapsychology Controversy

Throughout the analysis of the conflict of parapsychology and the existing conqeptual framework it has been shown that one result has been the rejection of parapsychological "facts". Although such rejection may in many cases be logically and experimentally supported, in other cases no such attempt has been made. In the latter case, parapsychological "facts" are found to be inadmissible because of the unlikelihood of the phenomena they support. Psi "facts" and their implications cannot be connected by a series of simple logical steps to the generally accepted paradigmatic scheme. They appear irreconcileable with canonical knowledge and consequently are considered unacceptable.

In such a rejection of parapsychological "facts", the evidence appears to be of less importance than the relevance or significance of the evidence. This point can be demonstrated with the following historical example. The strength of Soviet evidence for the existence of parapsychological phenomena was apparently no more extensive in 1959

than it was in the late 1930's. The work published by Vasiliev (1959, 1963, 1965) was based on his experimental work during the years 1932-1938, as well as the early work of others. In the interim between the late 1930's and 1959 there was next to nothing done in the area of parapsychology and nothing was published. The experimental argument presented to the scientific community in the early 1960's was not very different from twenty-five years earlier. It appears then that experimental "facts" were not the crucial factor in the limited acceptance of parapsychology in the early 1960's.

If, rather than the facts themselves, it is the significance of the facts that is of primary importance, then the occurrence of a priori rejection of parapsychological evidence is more clearly understood. It is extremely optimistic to confront a scientific community deeply ingrained in a set of beliefs concerning basic concepts with a radically different view and expect change. The history of science has shown that a "weltanschaung" based on the cumulative efforts and results of numerous observations and experiments widely reported and confirmed by other scientific authorities is not easily altered (Polanyi, 1963). Orthodoxy of dominant scientific opinion is not easily shattered. Research on attitude change has indicated that beliefs that an individual adheres to are very resistant to change. Such belief maintenance in science can lead to rigidity, inflexibility and orthodoxy. Such inflexibility can be considered in many instances useful and even necessary as well as malfunctional in others (Krantz, 1969). "Facts" that appear contradictory to the beliefs maintained by science can be usefully ignored. According to the academic community there is no point

to investing time, effort, and resources for the investigation into alleged facts that cannot be logically connected with paradigmatic knowledge.

In the controversy between the "facts" of parapsychology and the "facts" of traditional scientific tenets held by the larger percentage of Soviet scientists it appears to be difficult to establish one or the other as true. Certainly, the established paradigm has the advantage of historical time. Although there is no guarantee of its "truth", it is dominant and has proved to be useful in application. In order to demonstrate the "truth" of psi facts (rooted in its assumptions) over the established Weltanschaung (rooted in its assumptions) it is necessary to empirically test their predictions. But this is not a simple matter. As has been pointed out (Krantz, 1971; Eisen, 1974b), differing systems, each rooted in its own set of assumptions, have their own set of criteria for judging empirical "proof".

The controversy surrounding the question of acceptance or non-acceptance of parapsychology is stated (most often mascaraded but sometimes openly) in terms of the assumptive beliefs of the participants. The controversy then centers on "I believe" or "I don't believe". Tugarinov, a Soviet researcher, writes on this point.

> Preconceived ideas and ideological prejudices are the greatest obstacle to our work. First we will consider the question of telepathy. As is very well known, for centuries now there has existed in our nation the conviction that there are such things as premonitions, clairvoyance, and convergences of thoughts and feelings among people having close personal relations, etc. The problem is to distinguish reality from preconceived ideas and opinions. If such occurrences could in fact be proved, then our task should be to explain their energetic and physiological basis...The success of our

> investigations depends upon the unprejudiced co-operation of physicists, physiologists, and engineers. Whenever this topic is put up for discussion, one hears again and again: 'I don't believe in it' or 'I do believe in it.' But is this thing which we are trying to put on a solid foundation, a matter of belief? Above all, the question is, to examine by experimental scientific methods whether these phenomena exist or not. Should we find even fragments of them confirmed, then we ought to devote all our efforts to clarifying the rational basis of these phenomena. The opponents of telepathy often argue thus: 'Telepathy is impossible.' But nothing can be done on this argument alone. This can be challenged with the fact that the 'impossible' often becomes possible before our eyes...The psyche, that field which has been investigated least of all, is concealing the greatest scientific discovery of all (cited by Schafer, 1966, p.51-52).

A central problem in the controversy in the U.S.S.R. is that there is no known mechanism for psi phenomena and it is impossible to connect psi with accepted psychological models. Consequently the demonstration of its occurrence cannot be appreciated. In turn the experimental "facts" are interpreted to suit the assumptions and beliefs held. This is understandable in that each side of the controversy expresses a commitment, and in this sense goes beyond the evidence. The resolution of this controversy rests in the agreement between the two sides of the controversy in a set of mutually acceptable criteria.

CHAPTER VI

CONCLUSION

The claim for parapsychological phenomena is an invitation to controversy. Reactions to psi "facts" are preconditioned among many scientists. According to a recent editorial in Nature, such a claim to some "simply confirms what they have always known or believed. To others it is beyond the laws of science and therefore necessarily unacceptable" (Nature, 1974, p.559). The analysis in this thesis focused on the development of this controversial subject matter in the context of the U.S.S.R.

Summary

To summarize, the question of the acceptance of parapsychology in the U.S.S.R. was placed in a historical framework. Interest in parapsychological phenomena was seen to occur quite early in the U.S.S.R. (late 1800's), mainly in the area of spiritualism and mediumistic studies. The outstanding figure of the early 1900's was Bechterev who initiated studies on the question of telepathy. His enthusiasm, not only encouraged the formation of a state-funded laboratory for the study of telepathy under Doruv,[53] but also spawned a group of followers who were instrumental in revitalizing parapsychology in the early 1960's after about a twenty year lull in parapsychological work (about 1938-1959). The following is a short list of names of those who have carried on the work on paranormal phenomena since the rebirth of

parapsychological interest in the 1960's: L. L. Vasiliev, his successor P. I. Gulyayev, I. M. Kogan, E. K. Naumov, G. A. Sergeyev, V. P. Tugarinov, N. N. Sochivanov, N. A. Slavinskaya, I. F. Shishkin, P. P. Pavlova, A. V. Nicolaenko, L. I. Kuprianovitch, Y. P. Terletsky, M. Bonard, M. Smirnov, V. M. Inyushin, V. Adamenko, B. A. Dombrovsky, B. M. Inyushin, S. D. Kirlian, V. H. Kirlian, A. K. Mulatova, V. V. Kulagin, E. G. Griasnuhin, N. N. Fedorova, A. S. Roman.[54]

Psi research, like other areas of scientific research, was seen to be influenced to a large extent by the prevailing ideology of the country. The modern era of parapsychological investigation in the U.S.S.R. has been characterized by approaches seemingly similar to those of other sciences in the U.S.S.R. and in many respects very different from parapsychological investigations in the West. The emphasis has been primarily on individual (small sample), pragmatically-oriented, studies from an interdisciplinary approach and within the Soviet ideological perspective. Although these differences exist and are emphasized in this thesis, there are similarities and parallels, predominantly due to common roots in spiritualism and mediumship.

Having hurdled the main philosophical and ideological barriers, it appears that some of the material (e.g., telepathy) normally included under the subject heading of parapsychology in the West, has been gaining acceptance as a legitimate area of study in the U.S.S.R. As a research concern reborn in the early 1960's, primarily under the influence of L. L. Vasiliev, it has developed into an independent research focus within the natural and social sciences. However, these generalizations likely do not hold for all areas of research defined

by parapsychology in the West. Much subject matter that has been labeled "parapsychology" in the West has undoubtedly been dismissed as "unscientific concepts" (Zinchenko et al., 1973) in the U.S.S.R. Even peripheral involvement in such subject matter could be expected to draw strong opposition from both the political and scientific communities. Similarly, those who would involve themselves in such subject matter, would likely be expected to be faced with official harrassment and censure.

Resistance to the incorporation of parapsychological 'facts' into the framework of science by the scientific community is apparently still strong but gradually being overcome. It can be expected that limited acceptance of parapsychology at the political level has tremendously supported this trend.

The primary reason for this unacceptability appears to lie in the incompatability of the underlying assumptions of parapsychology and the basic tenets of both the political and the scientific "Weltanschaung". Parapsychology is an anomaly to an existing paradigm. Gardner Murphy (1968) compares parapsychology to an unwelcome guest in the house of science that has many rooms but is not yet large enough to accomodate all the children. Unwelcome guests are an embarrassment and are most often rejected. The unacceptability of the anomaly of parapsychology is expressed in several ways. Perhaps the most relevant rejection of parapsychology by the scientific community has been on the grounds that it is 'impossible' or 'a priori unlikely'.

It would seem that results of this conflict might be temporarily unproductive to both parapsychology as a developing science and the

scientific community. Much time would be taken up by "position" statements and statements of defense; time which could otherwise be used constructively to generate new data and new views. The reiteration of fundamentals and the repetition of experiments, however, appear to be essential in parapsychology's bid for acceptance.

Similarly, much time would be spent on the replication of experimental results in order to "prove" the existence of the phenomena. However, successfully replicated experiments would still not make the phenomena congruent without general physical conceptions of the relations of subjects to their environments. As Kuhn (1970) suggests, anomalies to a paradigm are conveniently set aside until they become too imposing, too numerous or too rudimentary to the paradigmatic assumptions.

Belief may play an essential role in the refusal to bridge from one position or the other. The significance of facts in terms of these beliefs, rather than their reliability, then becomes the root of the conflict. Unexpected discoveries are therefore not simply factual in import. It seems as Michael Polanyi (1946) suggests that only faith in the possibility of the hypothesis will make the evidence accessible to us.

The Present Situation

Although complete information concerning parapsychology in the U.S.S.R. is difficult to obtain, it is safe to say that the following are true:

1. The government has granted both political and financial support. For example, through political pressures some academic criticism has been minimized.

2. Interdisciplinary teams of scientists (physiologists, physicists, psychologists, mathematicians, cyberneticists, neurologists, electronics engineers, space travel specialists) have been organized to investigate: (a) how this form of communication works, (b) how to devise means of practical application.
3. This trend has led to the establishment of several research centers throughout the U.S.S.R. and Eastern Europe.
4. Paralleling this development, numerous independent researchers are apparently being encouraged to do full-time or part-time research in parapsychology or related areas.
5. An organized effort has been made to inform the scientific community as well as the public about parapsychology.
6. There appears to be increasing willingness on the part of Soviet parapsychologists to participate in international parapsychological exchanges.
7. Although major barriers have been overcome on the political level, academic resistance probably remains quite strong. Yet this academic resistance is continually decreasing especially with such favorable comments by influential academics such as Zinchenko et al. (1973).

Although it can be stated that parapsychology has achieved limited acceptance in the U.S.S.R., it is difficult to ascertain the degree of acceptance (relative to the degree of acceptance in the West, for example). An attempt could probably be made to compare the "degree of acceptance" of parapsychology in the U.S.S.R. and the U.S. To do this, some neutral criteria for judging the extent of acceptability in

the two geographical areas could be set up. These criteria could include such items as:

(1) number of research centers;

(2) number of workers in the field;

(3) amount of state support;

(4) amount of money invested in research;

(5) the number of articles published during a specified time span;

(6) the amount of academic interest in parapsychology by nonparapsychologists as determined by: (a) public statements of support, and (b) supportive publications;

(7) supportive statements by political and academic leaders;

(8) respective positions of workers in each country and their respectability in the academic community.

However, it is not possible to be optimistic about the results of such an attempt. Even if the research were carefully carried out, it would be unlikely that an accurate picture of the relative "degree of acceptability" would be obtained. Several reasons have already been mentioned in the introduction (see pages 5 through 7). The major problem concerns obtaining accurate information to satisfy the above categories. Accurate and up-to-date information is not available outside the U.S.S.R. and may be difficult to obtain even in the U.S.S.R.

Another alternative to judging the relative development of psi research in the U.S.S.R. with that of the West is to rely on reports of Western parapsychologists and those who have brought back first hand reports from the Soviet Union. On the whole, such reports (for example,

Ostrander & Schroeder, 1970; Mosa, 1971; Ullman, 1971; Krippner, 1973; Pratt, 1973) present a picture of Soviet research being well-developed relative to the U.S. in at least some areas. For example, Douglas Dean, a former president of the Parapsychological Association (PA), who is accredited with securing the affiliation of the PA with the American Association for the Advancement of Science (AAAS) in 1969, writes: "We have far to go to bridge the gap between certain areas of Soviet research and our own (U.S.A.) in the field of parapsychology..." (Dean, 1973, p.18).

The Analytic Model and Parapsychology

The model for the treatment of anomalous material in science presented at the beginning of Part II, appears to be useful in explaining the historical fluctuations in attitude towards the study of parapsychology in the U.S.S.R. It allowed the identification of the protagonists in the controversy surrounding parapsychology. Through analysis and comparison of the basic positions of the anomaly and the traditional paradigm, it was possible to gain insights into the conflict.

The conflict between parapsychology and (1) the political ideology and (2) the academic view as represented by Soviet psychology, was seen to be rooted in fundamental differences in assumptive beliefs. The basic tenets of parapsychology were shown to violate the expectations and assumptions of the established traditions.

The normal paradigm reaction to anomalous material according to our model is to discard the anomaly. If the violation cannot be discarded, the paradigm ceases to function and gives way to new

alternatives. Although attempts have been made historically to reject psi "a priori", ignore it or discredit it through argumentation, the anomaly has not been discarded in the U.S.S.R. Rather, certain subject matter labeled as parapsychology are gaining formal acceptance as being worthy of academic study.

In turn, the paradigm pressures of resistance were shown to affect compliance on the part of anomaly. In their bid for acceptance, Soviet parapsychologists were shown to act in ways to minimize the conflicts. Attempts have been made to reduce the threatening appearance of psi, formulate theories to show that psi has practical value, and appeal to other audiences for support.

Soviet parapsychology appears to be an example of an anomaly which challenges paradigm assumptions that are highly central. Psi in the U.S.S.R. is therefore similar to the representation shown in Figure 1 (c) (see page69). Psi "facts" challenge rudimentary assumptions within the Soviet ideological and scientific framework.

It has been assumed that the greater the centrality of the assumptions that are challenged by the anomaly, the greater the resistance to the anomaly. This has been explained in part by the relationship between paradigm assumptions and the degree of commitment to the assumptions. If commitment increases with increasing centrality, then it is reasonable to assume that resistance to anomaly will increase with decreasing peripherality. This is analogous to Festinger's (1957) view that increasing commitment causes decreasing attitude change.

If the above is accurate, then one other relationship can be inferred. The more central an anomaly strikes, the greater the likelihood

of fundamental paradigm change. It follows then that if all psi phenomena were taken into account by the U.S.S.R. and consequently assimilated into Soviet Science, then profound and fundamental changes would be required of current formulations. Resolution of the confrontation would appear to exist in the verification of a larger, more encompassing framework--a viable alternative to the present paradigm which is able to incorporate the anomaly.

If paradigm rigidity persists and a viable alternative paradigm does not emerge, then resistance to the anomaly may logically be expected to be maintained and possibly intensified. Such may have been the case with the antagonism toward genetics in the U.S.S.R. during the 1930's and 1940's. Genetics was perceived by the Kremlin to be anomalous to the state ideology and Soviet scientific endeavour. Under the lead of Lysenko, hostile attacks were directed at the study, research, and use of Mendelian genetics and any scientists who associated with it. The threat of Mendelian genetics was apparently so great that stronger measures were required to discard the apparent anomaly. Quick and effective measures are understandably more readily available in nations such as the U.S.S.R. where science is clearly politically dominated. Zirkle (1949) clearly delineates the events that followed the overt expression of resistance in its harshest form to a perceived anomaly. Geneticists and cytologists were dispersed. They lost their positions and were denied the exercise of their professions. Some simply disappeared and others, such as N. I. Vavilov, died under mysterious circumstances. Still others recanted to save their families and themselves.

Implications and Future Research

Aspects of this paper have implications for science in general. It raises several points that must be looked at more thoroughly. A more indepth look at the process of acceptance of parapsychology in the U.S.S.R. would be helpful in understanding the phenomena of absorption of anomalous material and the development of a new framework that would incorporate both traditional scientific views as well as parapsychology. A closer look would be extremely helpful in determining the criteria for acceptability set by science. Such information might be usefully generalized to other situations. It would be very worthwhile, for example, to more fully explore the hypothesis that the significance of "facts" are crucial to the problem of controversy, competition, and isolation of systems of ideas. Insights in this area have wide application.

This thesis points out that an analysis of movements within the complex of contemporary science may be usefully viewed from a sociological perspective. An analysis of the sociology of the parapsychological growth in the U.S.S.R. may be relevant and useful as an example of facets of the growth and developmental patterns of science. Indeed science may be more of a social phenomena than many previously suspected. Little research effort has been focused on the social aspects of the growth and structure of scientific knowledge.

The subject matter and conclusions of this thesis also have implications for parapsychologists. The insights of the above analysis might foster a better understanding of the continual resistance that psi researchers have had to deal with. Although the subject of

analysis was parapsychology in the U.S.S.R., many of the insights gained may be generalizable to parapsychology in other countries.

The model for the treatment of anomalous material in science has implications for science in general. The model, which was briefly elaborated at the beginning of Part II, may be useful for the analysis of events enveloping anomalies within scientific discipline. Through careful elaboration of the basic tenets of the anomaly and the paradigm, insights can be gained into specific points of conflict. Evaluation of these points of contradiction with respect to the degree of centrality on the continuum of basic paradigmatic assumptions allows the tentative prediction of events to follow. If, for example, the innovation challenges merely peripheral assumptions, then both the degree of resistance and the likelihood of paradigm change will be minimal. The events that might be expected to emanate from such a conflict would include the dismissal of the anomaly through various means or its tentative and possibly unsatisfactory incorporation into the established theoretical construction. Similarly, the anomaly in its bid for acceptance, might be expected to alter in response to the resistance it encounters.

On the other hand, if the attacking anomaly has a high degree of centrality, a different set of events would be expected. Both the degree of resistance encountered by the innovation and the likelihood of paradigm change would be at a maximum. The outcome of such a conflict might be expected to include intensified efforts to discard the anomaly and tenuous attempts to incorporate the anomaly into the paradigm. The profound impact of the anomaly alone, or its impact in

conjunction with other anomalies, in turn might be expected to lead to a period of crises and the eventual downfall of the paradigm. Parapsychology in the U.S.S.R. has been an example of both of these possibilities. While selected psi research is gaining official recognition, other more threatening psi subject matter is harshly criticized.

The model presented and elaborated throughout this thesis has not been as fully developed as it perhaps might have been. Its brief presentation suggests that a much more detailed account is required. However, through future refinement and elaboration of the model, greater predictability of events surrounding fundamental conflict involving anomalies in science, may emerge. Applying the principles of the model in more refined form, it may be possible to generalize about the possible immediate or future success or survival of perceived anomalies. The kinds of generalizations that could result from such studies might be analogous to Festinger's (1957) theory of cognitive disonance which allowed more refined insights into individual attitude change.

What is perceived as an anomaly at one point in time may be the rule at another time. The continued discrimination of events that embody the transition have been the subject of this thesis. With even greater discriminations the models that evolve will aid all concerned in minimizing the misunderstanding and unproductivity that so often characterizes scientific controversy. The Baldwin-Titchner debate in the early days of psychology in the 1900's represents a controversy that may have evolved somewhat differently had more adequate insights

into the socio-historical aspects been grasped. As Krantz (1969) points out, the evolution of the debate was paralleled with decreasing reliance on data, with increasing reliance on invective and personal attacks on opponents. Insights into controversy and resistance to novel ideas would be useful in monitoring reactions as well as anticipating reactions to the introduction of novel ideas.

One thing is certain: parapsychology in the U.S.S.R. deserves a closer look by Western eyes. The Western parapsychologist could benefit tremendously from an indepth study of research in the U.S.S.R. The interested U.S.S.R.-watcher can regard parapsychology as a unique and growing phenomena in the Soviet Union. And the historian of social movements and paradigm change can look more closely at parapsychology in the U.S.S.R. as a unique example of the absorption of anomalous material and perhaps as one of many stimuli for paradigm shift. The question then changes from one concerning parapsychology in the U.S.S.R. to "How does a new science gain accreditation?" or "What happens to an innovation?" A major contribution of parapsychological research to psychology and science in the U.S.S.R. may turn out to be the attention it is drawing to the circumstances that make a scientific finding believable.

FOOTNOTES

[1]The term "parapsychology" and related terms that will be used in this paper are defined in Appendix I.

[2]A comprehensive history of parapsychology is lacking. However, Dr. Michael McVaugh of the University of North Carolina and Dr. Seymour Mauskopf of Duke University are presently preparing a history of parapsychology under a grant from the National Science Foundation (Journal of Parpasychology, March, 1974, 38(1), p.122).

[3]A list of representative investigative organizations of some of the countries of the world can be found in Appendix II.

[4]A useful innovation may be found in Brislin, R. W. Back-translation for cross-cultural research. Journal of Cross Cultural Psychology, 1970, 1(3), p.185-216.

[5]There is no evidence to suggest that such controversy has existed in underdeveloped nations. However, there is evidence to suggest that phenomena that could be given paranormal interpretations are not uncommon in "primitive" cultures (Stewart, no date; Van de Castle, 1974). It may well be that hypothesized psychic abilities are capabilities that man has evolved from as opposed to evolving to. This view has drawn support from at least one parapsychologist (Vasiliev, 1963). On the other hand it may be that elements of Western culture have limited contemporary man's sensitivity in areas of psychic ability. Such a

view would likely demand an hypothesized cultural forgetfulness and consequent resistance as suggested by Eisenbud (1967, Chapter XIV).

[6]See article by M. Shakhnovich "Sotsialniye korni spiritisma" (The Social Roots of Spiritism) Voinstvuyushchiy ateism, No. 11, 1931, p.21.

[7]In 1875 and 1876 the St. Petersburg (now Leningrad) periodical Vestnik Evropy (European Messenger) published a discussion of mediumistic and spontaneous psi phenomena (Editor's Note, 1968, p.337).

[8]Mendeleev authored a book of his investigations, Materialy dlya suzhdenia o spiritisme (Materials for the Appraisal of Spiritualism), St. Petersburg, 1976 (Vasiliev, 1965, p.39).

[9]Some experiments of the St. Petersburg groups have been recorded in the Journal of the Society for Psychical Research (London, England) in the Annals des Science Psychiques (Paris), and in the German magazine Psychische Studien (Leipzig), founded by Mr. Aksakov in 1975 (Editor's Note, 1968, p. 338).

[10]Professor W. F. Barrett who was chiefly responsible for the founding of the S.P.R. in London, England in 1882 (Gauld, 1968, p.137) as well as a similar organization in the United States (Gauld, 1968, p.147) wrote Enigmatic Phenomena of the Human Psyche which was translated into the Russian as Zagadochnye yavleniya chelovecheskoi psikhiki, Moscow, 1914. Phantasms of the Living (2 vols., London, 1886) by E. Gurney, F. W. H. Myers and F. Podmore was published in Russian as Prizhiznennye prizraki i drugiye telepaticheskiye yavleniya, St. Petersburg, 1895 (Teodorovich, 1968, p.16). P. Janet's L'automatism psychologique, Paris, 1889, was published in Russian in 1913 (Vasiliev, 1963, p.165).

[11]V. M. Bechterev "Experiments on the effects of 'mental' influence on the behavior of dogs". Problems in the Study and Training of Personality, Petrograd, 2nd Edition, p.230-265 (Vasiliev, 1963, p.161).

[12]The German version appeared in 1924 in the Zeitschrift fur Psychotherapie. The English version (Bechterev, 1949) is a translation directly from the German by Dr. Gerda Walther.

[13]For a report on this presentation see "About Telepathy. First Public Experiment Demonstrating Mental Sending to Sleep and Awakening in the U.S.S.R." by K. I. Platanov in Vasiliev (1965, p.151-155).

[14]V. M. Bechterev "Experiments on the effects of 'mental' influence on the behavior of dogs" Problems in the Study and Training of Personality, Petrograd, 2nd Edition, p.230-265. P. Flecker "Experiments in so-called mental suggestion on animals", ibid. p.272. A. G. Ivanov-Smolensky "Experiments in mental suggestion on animals", ibid, p.266.

[15]French material appeared to be more assessable to Russia at that time. Also, Vasiliev visited the International Metapsychic Institute in France (as well as the recently founded Institute for Parapsychology in Berlin) in the summer of 1928 (Vasiliev, 1963, p.4).

[16]Although Vasiliev writes that the results of this period of almost six years of work was embodied in three reports--The Psychophysiological Basis of the Phenomena" (1934), "Concerning the Physical Basis of Mental Suggestion" (1936), and "The Effects of Mental Suggestion on Acts of Movement" (1937)--there is no record to my knowledge of them being published before 1963 in Vasiliev's book which appeared in Russian in 1962. The report of 1936 was presented by I. F. Tomashevsky

as a thesis at the Institute for Brain Research.

[17] A. G. Ivanov-Smolensky "Optyty myslennogo vozdeistviya na zhivotnyh" (Experiments in the Mental Influencing of Animals) in Voprosy izucheniya i vospitaniya lichnosti (Questions Concerning the Study and Development of the Personality) Volume II, Petrograd, 1920, along with an article by V. M. Bechterev "Ob opytakh nad 'myslennym' vozdeistviyem na povedeniye zhivotnykh" (Experiments on 'mental' influencing of the Behavior of Animals). B. B. Kazhinsky, Peredacha myslei (Thought Transmission), Moscow, 1923.

[18] For example, L. L. Vasiliev presented a theoretical paper on "The biophysical foundations of direct thought transmission" at a plenary session of the Society for Neurology, Reflexology, Hypnotism and Biophysics (which was attached to the Institute for Brain Research) in 1926. The paper expounded a materialistic approach to the phenomena and was published, in popular form, in Science News (No. 7, 1926) (Vasiliev, 1963, p.3).

[19] L. L. Vasiliev before he died in 1966 was Chairman of the Department of Physiology at the University of Leningrad, a corresponding member of the Soviet Academy of Sciences and holder of the Lenin Price.

[20] Messadie, G. Du Nautilus (About the Nautilus). Science et Vie, February, 1960, No. 509.

[21] Vasiliev, L. L. On the electromagnetic radiation of the brain. Paper read at the 15th Conference of Science and Technology Age of Wireless, Journal of the All Union Radio Technological Society (Vasiliev, 1963, p.162).

[22]M. Guzeev. Tomorrow's psychology. Leningrad University, June 15, 1960.

Interview with B. B. Kazhinsky Science and Life, 1960, No. 11, p.46.

Discussion: Thought transmission--is it possible? In Knowledge is Power, 1960, No. 2, p.18-23.

Interview with Professor L. L. Vasiliev. Do psi phenomena exist? Shift, January 25, 1961.

Discussion in Youth and Technology, 1961, Nos. 1, 2 and 3.

Tougarin, V. P. Thought transference--again. Knowledge and Power, 1961, No. 7, p.22 (Vasiliev, 1963, p.161).

Some of this discussion recorded in Znaniye-Sila, 1960, No. 12 has been translated and appears in Soviet Review, 1961, 2(6), p.4-21.

[23]The group included eminent scientists from various fields: S. G. Gellersteyn (professor of psychology, University of Moscow); E. T. Faddeev (philosopher); D. I. Mirza (psychiatrist); M. S. Smirnov (Laboratory of Vision, Institute of Problems of Information Transmission, U.S.S.R. Academy of Sciences, Moscow), E. K. Naumov (Ryzl, 1969, p.43).

[24]See also a report on Edward Naumov's travels from the Baltic to Siberia and his acceptance by a wide variety of academicians in Parapsychology Review, May-June, 1972, 3(3), p.27.

[25]The International Journal of Parapsychology edited a special issue on "Parapsychology in the U.S.S.R." (1965, 7(4)). Many of the articles which are translations of Russian publications are related to DOP phenomena.

[26]See for example Hodgson, R. On vision with sealed and bandaged eyes.

Journal of the Society for Psychical Research, 1884, 1, 84-86. Jules Romains (Pseudonym) published Eyeless Sight in France in 1920. Similarly, Mesmer's followers suggested that their magnetized patients were able to read while blindfolded and that their vision had been transferred to their fingertips or other parts of their body (Ryzl, 1970, p.154). See also, Osty, E. Supernormal Faculties in Man. London: Methuen, 1932; D. Hettinger, The Ultra-Perceptive Faculty. London: Riders, 1941 (Ph.D. thesis, University of London).

[27] Poznanskaya, N. B. Skin sensitivity to infrared and visible rays. Byulleten' Eksperimental'noy Biologii i Meditsiny (Bulletin of Experimental Biology and Medicine), 1936, 2, No. 5.

Poznanskaya, N. B. Skin sensitivity to visible and infrared irradiation. Fiziologicheskiy Zhurnal SSSR (USSR Physiology Journal), 1938, 24, No. 4.

Poznanskaya, N. B., Nikitskiy, N. N., Kolodnaya, Kh. Yu., & Shakhnazar'yan, T. S. Skin sensitivity to visible and infrared rays. Sbornik Dokladov vi Vsesoyuznogo S'yezda Fiziologov (Collection of the Reports of the Sixth All-Union Congress of Physiologists). Tbilisi, 1937, p.307-312. (Razran, 1966, 13; Naumov, 1971, 44-45).

Khovrin, A. I. Redkaria ferma giperstezii vysshikh organov chuvstv. Voprosy nervno-psikhicheskoi meditsiny, 1898, Nos. 3 and 4 (Novomeiskii, 1963).

[28] Published in Leont'ev, A. N. Problemy razvitlia psikhiki (Problems of Mental Development). Moscow: APN RSFSR (Academy of Pedagogical Sciences), 1959, p.53-127. For a report of the experiments referred to see Razran, 1966, p.9.

[29]Chairman of the All Union Society of Psychologists, member of Soviet Academy of Pedagogical Sciences, Chairman of the Department of Psychology, University of Moscow and holder of the Lenin prize.

[30]Bongard, M. M. and Smirnov, M. S. The 'skin vision' of R. Kuleshova. Biofizika, 1965, 10(1), 148-154.

Nyuberg, N. D. 'Sight' in fingers. The phenomena of Rosa Kuleshova. Priroda, 1963, No. 5, p.61-67.

Novomeysky, A. S. The role of derma-optical sensitivity in cognition. Voprosy filosofii, 1963, No. 7, 131-139.

Goldberg, I. M. The phenomena of Rosa Kuleshova. In G. Zamirova (ed.) Problemy kozhno-opticheskoy chuvstvitel'nosti (Problems of dermo-optical sensitivity). Ucheniye zapiski, 33, Sverdlovsky gosudarstvennyy pedagogichesky institut (Scientific Bulletin, 33, Sverdlovsk State Pedagogical Institute).

[31]Vasiliev (1965) pages 155-156 also reports of a case communicated to him by Drs. Shilo and Lapitsky of the Polotsky Psychiatric Hospital, as well as an observation by Dr. S. S. Korsakov, the well known Russian psychiatrist.

See also Teodorovich (1967) pages 20-21; Ryzl (1970) pages 154-157; Moss (1971), page 42; International Journal of Parapsychology, 1965, 7(4), whole issue.

[32]For experimental detail see Novaneiskii, A. J. Raspoznavanie tsveta pal-tsami. Nauka i zhizn, 1963, No. 2; Novaneiskii, A. S. Ruki vidiat. Sovetskii Soiuz, 1963, No. 4.

[33]See also Teplov, L. Clairvoyance. Uralskiy rabochiy, February 25-27, 1964; Teplov, L. Clairvoyance? I don't believe it. Literaturnaya gazeta, April 25, 1974.

[34]See also Nyuberg, N. D. Seeing with the fingers, and the Clairvoyance of L. Teplov. Priroda, 1964, No. 6, p.74-76.

[35]See footnote 34.

[36]Although it is convenient to use the U.S., the similarities between the U.S., Western Europe, Canada, Japan, India in parapsychological research allows a broader comparison. In other words, U.S. research can be considered representative of "Western" oriented countries.

[37]Stevenson, Ian. Some new cases suggestive of reincarnation. Journal of the American Society for Psychical Research, 1974, 68(1), p.58-90.

[38]The term 'parapsychology' has been used recently in a highly respectable journal in the U.S.S.R. (Zinchenko et al., 1973). This article is peculiar in that Western terminology is used throughout.

[39]This does not mean that U.S. parapsychologists have not enthusiastically investigated physical correlates of psi phenomena. Ullman, Krippner, and Honorton as well as independent researchers such as Rex Stanford and G. Pratt at the University of Virginia, to mention a few, have associated psi with an objective brain state (i.e., alpha brain rhythms) (see Ullman, M., Krippner, S., and Vaughan, A., Dream Telepathy, 1973). However, overall the U.S. researchers have tended to minimize the interrelationship of psi and the physical brain.

[40]Dr. Van de Castle, then president of the Parapsychological Association, mentioned the overemphasis on data gathering at the meeting of the American Association for the Advancement of Science in 1970 (Tietze, 1971, p.21).

[41]See for example the work with the popular subject, Kulagina (Herbert, 1972, 1973; Pratt, J.G., and Keil, H. H. J., 1973).

[42]One exception may be a recent journal in Czechoslovakia. (See Parapsychology Review, January-February, 1972, p.12). A journal that probably reports more Soviet bloc articles in parapsychology is an English journal entitled Journal of Paraphysics.

[43]Four of the most prominent journals in the West are Journal of Parapsychology (published by the Parapsychological Association (PA)), Journal of the American Society for Psychical Research (New York), Journal of the Society for Psychical Research (London), and the International Journal of Parapsychology (stopped publication in 1968 and became Psychic). However, there are numerous others.

[44]For example, I have not run across any studies that utilize inferential statistical models.

[45]Schmidt, H. PK experiments with animals as subjects. Journal of Parapsychology, 1970, 34(4), p.255-261.

Scouten, S. A. A psi experiment with mice in a dual choice design with positive reinforcement. Research Letter of the Parapsychological Division of the Parapsychological Laboratory, University of Utrecht, March, 1972, p.16-44.

In fact in the last nine issues of the Journal of Parapsychology

(35(4) 1971 to 37(4) 1973) the articles can be classified as follows: non-animal experiments--17, animal experiments--12, nonexperimental theoretical papers--1.

[46]I gratefully acknowledge the influence of David L. Krantz's views on this conception. Personal communication with David L. Krantz (1971).

[47]This postulate is not accepted by all parapsychologists in the U.S.S.R. Velinov (1968) for example relates several experiments that utilize an "information and communication" model that appears to incorporate electromagnetic transmission properties. V. M. Bechterev proposed the electromagnetic hypothesis (Vasiliev, 1963, p.13). This support was continued by B. B. Kazinsky. Vasiliev (1965) discussed the electromagnetic hypothesis (p.136-145). According to him there are two sets of data that contradict the electromagnetic hypothesis: (1) The strength of electromagnetic fields generated by the biocurrents of the functioning brain is very low and cannot account for the phenomena of telepathy. See for example V. K. Arkadiev "ob elektromagnitnoy gipoteze peredachi myslennovo vnushenia" (On the Electromagnetic Hypothesis of the Transmission of Mental Suggestion) Zhurnal prikladnoy fiziki, I (1924), p.215. (2) Experiments (Vasiliev, 1963, 1965, p.143-144) suggest that shielding does not hinder the transmission of thought. This view is becoming more acceptable even though B. B. Kazinsky in Peredacha mysley (Thought Transmission) Moscow, 1923, and in Biologischeskaya radiosuyaz (Biological Radio Communication) Kiev, 1962, suggests that shielding does inhibit transmission.

[48]This does not mean that Western Science has or can remain independent of political philosophy. Krauss (1972) in discussing Social psychology

in the U.S.S.R. makes the point that "...a belief that Western Social science has managed in some sense to remain 'ideology free'" is untenable (p.5). He goes on to suggest that "it can easily be demonstrated that Western social science has traditionally been framed in terms of prevailing political ideology, has gained material support because of its compatability with such doctrine, and has frequently served to reinforce and extend interests generated by ideological concerns" (p.5).

[49] A Soviet definition cited by Wetter (1962, 66).

[50] The Journal of Parapsychology (1965) published the translations of such a controversy that appeared in the Russian press. Appears under the title "Parapsychology in the Russian Press". International Journal of Parapsychology (1965, 7, (4)) have translated some Russian articles relevant to the controversy.

[51] See for example:

1. Eastman, M. Out-of-the-body-experiences, Proceedings of the Society for Psychical Research, 53 (part 193), December, 1962.
2. The work of Charles Tart with R. A. Monroe referred to in the introduction of Monroe, R. A. Journeys out of the body, Garden City, N.Y.: Doubleday, 1971.
3. The many books of Robert Crookall on the subject.
4. More recently, in the past few years, American Society for Psychical Research has been undertaking an elaborate and extensive investigation of the subject under the directorship of Dr. Karlis Osis.

[52] For a summary of some interpretations and hypotheses put forward in the

U.S.S.R., see Kogan (1967).

[53]It is perhaps interesting to note that this was probably the second government funded laboratory in the world--the first being established in Holland.

[54]For the confirmation of these names, see Herbert (1969) and the bibliographical references offered in this thesis.

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APPENDIX 1

DEFINITIONS OF TERMS

All definitions marked by a star (*) are taken from the glossary of R.A. White and L.A. Dale Parapsychology: Sources of Information (compiled under the auspices of the American Society for Psychical Research) Metuchen, New Jersey: Scarecrow Press, 1973.

All definitions marked by a double star (**) are taken from the glossary of a 1974 issue of the Journal of Parapsychology.

Definitions taken from other sources have the reference immediately following the definition.

*ANPSI. Psi in animals. See also Psi-trailing.

*APPARITION. See Phantasm.

*APPORT(noun). The arrival of an object in a closed room, indicating the apparent passage of matter through matter. Also, the object itself.

*ASTRAL BODY. Primarily a theosophical term for the "double" or replica of the self, which is said to leave the physical body as in out-of-the-body experiences.

*ASTRAL PROJECTION. See out-of-the-body experience.

*AUTOMATIC WRITING. Writing that is not under the conscious control of the writer.

*AUTOSCOPY. The act of seeing one's double, or one's body as if from a point outside the center of consciousness.

*BILOCATION. The experience of seeming to be in two different locations at the same time.

BIOCOMMUNICATION. Soviet term for telepathy.

BIOENERGETICS (also BIOENERGY). Soviet term for psychokinesis.

BIOINFORMATION. Soviet term comparable to parapsychology. See also PSYCHOTRONICS.

BIOINTROSCOPY (also INTROSCOPY). Soviet term for clairvoyance.

BIOLOGICAL RADIO. Soviet term for telepathy.

BIOPHYSICAL EFFECT. Soviet term for dowsing.

BRAINBROADCASTING. Old Soviet term for telepathy.

**CLAIRVOYANCE. Extrasensory perception of objects or objective events.

*COLLECTIVE HALLUCINATION. An hallucination experienced simultaneously by two or more persons who are together at the time. See also RECIPROCAL HALLUCINATION.

*CRYPTESTHESIA. A synonym for ESP (coined by Richet).

*CRYSTAL-GAZING. See SCRYING.

*DEATHBED EXPERIENCE. Apparent awareness of the presence of deceased loved ones or a state of exaltation on the part of a dying person.

*DEJA VU. An illusion of memory in which a new event feels as if it had been experienced before.

*DISSOCIATION. A splitting of the self such that one part behaves independently of the other, each functioning as a separate unit. See also ALTERED STATE OF CONSCIOUSNESS.

*DOWSING. The use of a divining rod (forked twig or other instrument) to locate underground water or hidden objects by means of following the direction in which the rod persists in turning. See also AUTOMATISM; PENDULUM.

**ESP (Extrasensory Perception). Experience of, or response to, a target object, state, event, or influence without sensory contact. (Includes telepathy, clairvoyance and precognition.)

*FIRE-IMMUNITY. The ability to come into direct contact with fire or red-hot coals without being burned.

*GLOSSOLALIA. Speaking in "pseudo-tongues." See also ZENOGLOSSY.

*HAUNTING. The more or less regular occurrence of hallucinatory phenomena associated with a particular place and usually attributed to the activity of deceased spirits.

INTROSCOPY (also BIOINTROSCOPY). Soviet term for clairvoyance.

*LEVITATION. The raising of objects or bodies in the air by supposedly paranormal means.

*LUMINOUS PHENOMENA. The appearance of luminous substances with no explicable origin, usually associated with physical mediumship or ecstatic states.

*MATERIALIZATION. A manifestation of physical mediumship in which human forms or objects become visible in apparently solid form by allegedly paranormal means.

*MEDIUM, MENTAL. A person who regularly receives messages purporting to come from the deceased and transmits them to the living.

*MEDIUM, PHYSICAL. A person who sits regularly, usually with a group of other persons, to produce physical effects alleged to be paranormal. See also APPORT, LEVITATION, MATERIALIZATION.

MENTAL SUGGESTION. Old Soviet term for telepathy.

*METAPHYSICS. Synonym for psychical research (coined by Richet).

*OUT-OF-THE-BODY EXPERIENCE. The experience, which can be either spontaneous or induced, of seeming to be in a place separate from

one's physical body.

*PK. See PSYCHOKINESIS.

PARADIAGNOSTICS. Denotes medical diagnosis based on clairvoyance, without contact with the patient (Zinchenko et al., 1973, p.5).

PARAMEDICINE. A field close to parapsychology, concerned with methods of treatment for which we have no explanation (Zinchenko et al., 1973, p.5).

*PARANORMAL. A synonym for psi, psychic, or parapsychological: beyond or beside ("para") what should occur if only the normal laws of cause and effect are operating.

*PARAPSYCHICAL. A synonym for paranormal, i.e., attributable to psi.

**PARAPSYCHICAL (Parapsychological). Attributable to psi.

**PARAPSYCHOLOGY. The branch of science that deals with psi communication, i.e., behavioral or personal exchanges with the environment which are extrasensorimotor--not dependent on the senses and muscles.

*PERCIPIENT. A subject in an ESP test, or a person who has a spontaneous psi experience.

*PHANTASM OF THE DEAD. An appearance suggesting the presence of a person (or animal) who is no longer living.

*PHANTASM OF THE LIVING. An appearance suggesting the presence of a living person (or animal) who is not there.

*POLTERGEIST. Poltergeist phenomena involve the unexplained movement or breakage of objects, etc., and often seem to center around the presence of an adolescent; they differ from hauntings in that apparitions are rarely seen.

*POSSESSION. A state in which a person's organism appears to be under the control of another center of consciousness.

*POST-MORTEM COMMUNICATION. A communication allegedly from a deceased to a living person, usually through a medium.

**PRECOGNITION. Prediction of random future events the occurrence of which cannot be inferred from present knowledge.

PROSCOPY. Soviet term for precognition.

*PROXY SITTING. A mediumistic sitting in which the person desiring to receive communications is represented by someone else, a "proxy," at the sitting.

**PSI. A general term to identify a person's extrasensorimotor communication with the environment. Psi includes ESP and PK.

*PSI-MISSING. The use of psi so that the target the subject is trying to hit is missed more often than would be expected if only chance were operating. See also SECONDARY EFFECT.

**PSI PHENOMENA. Occurrences which result from the operation of psi. They include the phenomena of both ESP (including precognition) and PK.

*PSI-TRAILING. A form of anpsi in which a pet finds its owner in a distant location where it has never been before.

*PSYCHIC PHOTOGRAPHY. The paranormal projection of mental images on photographic plates or film. See also SPIRIT PHOTOGRAPHY.

*PSYCHICAL RESEARCH. The study of phenomena which cannot be explained in terms of established physical principles; older term for parapsychology.

PSYCHOENERGETICS. Soviet term for parapsychology.

*PSYCHOKINESIS (PK). The direct influence of mind on matter.

**PSYCHOKINESIS (PK). The extramotor aspect of psi; a direct (i.e., mental but nonmuscular) influence exerted by the subject on an external physical process, condition, or object.

*PSYCHOMETRY. Object-reading, or the ability of some mediums and sensitives to divine the history of or events connected with a material object when holding it.

PSYCHOTRONICS. Soviet term sometimes equated with parapsychology (Zinchenko et al., 1973, p.5). Sergeyev (1974, p.57) offers the following definition: A region of knowledge concerned with the study of objective laws governing the conversion of the energy of mental activity into other forms of energy. Consequently, psychotronics investigates not only the inter-action of energy over distances between people but also between people and animals, plants, or objects.

*RECIPROCAL HALLUCINATION. An hallucination elements of which are shared by two persons out of sensory range of each other. See also COLLECTIVE HALLUCINATION.

*REINCARNATION. A form of survival in which the mind, or some aspect of it, of a deceased individual is reborn in another body.

*RETROCOGNITION. Knowledge of a past event which could not have been obtained by normal means. See also PRECOGNITION; PSYCHOMETRY.

*SCRYING. The use of a crystal or other bright reflecting surface upon which to project hallucinatory images; e.g., crystal-gazing.

*SENSITIVE. A person who is "psychic," that is, who has frequent psi experiences and can at times induce them at will; similar to a medium, except that communications purporting to come from

deceased are usually not involved. See also MEDIUM.

*SHEEP-GOAT EFFECT. The relationship between belief in ESP and ESP scoring level, believers (sheep) tending to score above chance and disbelievers (goats) at or below chance.

*SITTING. An interview with a medium or sensitive for the purpose of obtaining messages from the deceased or other types of psi information.

*SLATE WRITING. The supposedly paranormal appearance of written messages on slates in the presence of a medium.

*SPIRIT COMMUNICATION. A communication, usually obtained through a medium, purporting to come from a deceased personality.

*SPIRIT PHOTOGRAPHY. The projection of images, usually self-portraits, on film or photographic plates allegedly accomplished by the activity of deceased persons. See also PSYCHIC PHOTOGRAPHY.

*SPIRITUALISM. Doctrines and practices based on the belief that survival of death is a reality and that communication between the living and the deceased occurs, usually via mediumship.

*STAGE TELEPATHY. The use of various methods of simulating telepathy, usually devised by magicians for the purposes of entertainment.

*STIGMATA. The production by suggestion of blisters or other cutaneous changes on the feet, hands, or elsewhere on the body of the subject.

*SUPERNORMAL COGNITION. A synonym for psi (coined by Osty).

*SYNCHRONICITY. Term coined by Jung to indicate that an acausal principle could account for psi occurrences, or, as he preferred to call them, "meaningful coincidences".

**TELEPATHY. Extrasensory perception of the mental state or activity of another person.

*TRANCE. A dissociated state characterized by lack of voluntary movement in which various forms of automatism are expressed; usually exhibited under hypnotic or mediumistic conditions. See also ALTERED STATES OF CONSCIOUSNESS.

*TRANSFIGURATION. The alleged capacity, usually mediumistic, of taking on recognizable bodily characteristics of deceased persons.

*UNORTHODOX HEALING. Healing effected by non-medical techniques (such as prayer, the "laying on of hands," etc.) and inexplicable in terms of present-day medical science.

*VERIDICAL DREAM. A dream presumptively paranormal in that it corresponds in some of its details with events beyond the dreamer's sensory range.

*WATER WITCHING. See DOWSING.

*XENOGLOSSY. The ability to speak in a language normally unknown to the speaker. See also GLOSSOLALIA.

APPENDIX 2

PARTIAL LIST OF REPRESENTATIVE INVESTIGATIVE ORGANIZATIONS OF SELECTED COUNTRIES

The following is a list of some of the main research organizations around the world. This list is by no means intended to include all research organizations. Research centers of the USSR have been excluded since they are listed separately in the main body of this thesis (see Table 1).

International

Parapsychological Association (P.A.). Affiliated with the American Association for the Advancement of Science since 1969.

United States

American Society for Psychical Research (ASPR)
5 West 73rd Street
New York, New York 10023

Division of Parapsychology
Department of Psychiatry
University of Virginia Medical Center
Charlottesvill, Virginia 22901

Dream Laboratory
Department of Psychiatry
Maimonides Medical Centre
4802 Tenth Avenue
Brooklyn, New York 11219

Foundation for Research on the Nature of Man (FRNM)
Box 6847
College Station
Durham, North Carolina 27708

Institute for Parapsychology
Box 6847
College Station
Durham, North Carolina 27708

Parapsychology Foundation
29 West 57th Street
New York, New York 10019

Psychical Research Foundation (PRF)
Duke Station
Durham, North Carolina 27706

Britain

Society for Psychical Research (SPR)
1, Adam and Eve Mews
London W8 6UQ England

Institute of Psychophysical Research
118 Banbury Road
Oxford, OX2 6JU
England

Paraphysical Laboratory
Downton,
Wiltshire, England

India

Department of Psychology and Parapsychology
Andhra University
Waltair Visakhaptam 3, India

India Institute of Parapsychology
Allahabad, India

Germany

Institute Fur Grenzgebiete der Psychologie (Institute for border areas of Psychology)
78 Freiburg in Breisgan
Eichhalde 12, West Germany

Netherlands

Parapsychological Division of the Psychological Laboratory
Varkenmarkt 2
Utrecht, The Netherlands

France

Ensemble de Recherche et d'Entrainement Telesthesie
Paris, France

Institut Metapsychique International
Paris, France

Switzerland

Vereinigung fur Parapsychologie

Africa

South African Society for Psychical Research
Johannesburg, South Africa

Denmark

(Danish SPR) Selskabet for Psykisk Forskning

Italy

Italian Society of Psychical Research

Brazil

Sociedale de Investigacoese Estudos Parapsicologicos (Society for Parapsychological Investigations and Studies)
Rua Guilherme Rocha 946
Fortaleza, Ceara
Brazil

APPENDIX 3

EXAMPLES OF DATA FROM SOVIET PSI EXPERIMENTS IN TABULAR FORM

Experimental results for long- and short-range transmissions.

Type of Experiments	# of Experiments		Distance, m	Amount of information, bits	Transmission time, T	Transmission speed, bit/sec
	Total	Fraction successful				
1. Action with objects at short distances	28	0.5	4	3.3	1	0.05
2. Suggestion of images at short distances		0.8	5	17	3	0.1
3. Suggestion of images at long distances	5	0.6	$600\ 10^3$	17	5	0.06
	6	0.5	$3000\ 10^3$	17	60	0.005
4. Transmission of images at long distances	28	0.57	$4000\ 10^3$	28	80	0.006
	4	1	$4000\ 10^3$	4	80	0.001

(from Velinov, 1968, p.22)

	Nature of Experiments	Distance in km.	Total No. of expts.	% of successful expts.	Information bits	Length of transmission (mins.)	Speed of info. trans. (bits/secs)
Over short distances	Selection of articles (Moscow)	2-5	60	57	3.3	1	0.05
	Suggestion of images (Moscow)	5	30-50	80	17	3	0.1
	Suggestion of numbers (Moscow)	3-2000	135	78	3.3	0.5-3	0.1-0.02
Over long distances:	Suggestion of images:						
	Of unfamiliar articles (Leningrad-Moscow)	600	5	60	17	5	0.06
	(Moscow-Novosibirsk)	3000	6	50	17	60	0.005
	Zener Cards (Moscow-Novosibirsk)	3000	25	(48)*	58	50	(0.02)*
	One of two articles	4000	28	57	28	80	0.006
	(Moscow-Tomsk)	4000	4	100	4	80	0.001

*Results insufficiently reliable

(from Naumov, 1968, p.48)

APPENDIX 4

RAW DATA FOR GRAPHS IN FIGURE NUMBERS 3 AND 4

Breakdown of entries in Naumov, E.K. and Vilenskaya, L.V., Soviet Bibliography on Parapsychology (Psychoenergetics) and Related Subjects, Moscow, 1971.

Year	Entries		
	Parapsychology	Related Subjects	Total
1971	26	16	42
1970	20	29	49
1969	42	50	92
1968	44	49	93
1967	37	35	72
1966	37	29	66
1965	18	47	65
1964	22	37	59
1963	12	36	48
1962	12	11	33
1961	4	6	10
1960	7	4	11
1959	2	5	7
1958	1	6	7
1957	1	2	3
1956	1	1	2
1955			
1952	1		1
1948	1	1	2
1947	2		2
1944	3		3
1942	1	1	2
1938		1	1

Year	Entries		
	Parapsychology	Related Subjects	Total
1937	1	1	2
1936	2	1	3
1933	1		1
1931	2		2
1930		2	2
1928		1	1
1927	1	2	3
1926	3	1	4
1924	2	1	3
1923	3		3
1922	1	1	2
1921	2		2
1920	4		4
1915		1	1
1914	1		1
1913	1		1
1908	3		3
1902	1		1
1898		1	1
No Date	2	4	6

APPENDIX 5

RELEVANT SOVIET BOOKS ON PARAPSYCHOLOGY

Adabashev, I. On the Edge of Mystery. Moscow: Profizdat, 1962.

Bechterev, V.M. Experiments on the effects of 'mental' influence on the behavior of dogs. In Problems in the Study and Training of Personality. Petrograd, 2nd Edition, 1920, pp.230-265. (This book contains other papers on parapsychology by (1) P. Flecksor, p.272, (2) A.G. Ivanov-Smolensky, p.266.)

Biriukov, D.A. Physiology against religion and mysticism. Moscow: Znanie, 1965.

Dvinsky, E. Durov and his performing animals. Moscow: Foreign Language Press (in English).

Fedoseev, P.N., et al. (eds.) Philosophical problems in the physiology of higher nervous activity and psychology. Moscow: Academy of Sciences, 1963, p.384, 703-704, 713.

Gouliaev, P.I. The electrical activity of the human cerebral cortex. Leningrad: University Press, 1960.

Gulyayev, P.I. Elektricheskiye protsessy kory golovnogo mozga cheloveka (Electrical processes in the human cortex).

Inyushin, V.M., Grishchenko, V.S., et al. On the biological essence of the Kirlian effect (concept of biological plasma). Alma-Ata: Kazak State Kirov University, 1968.

Kazhinskiy, B.B. Transmission of thought. Moscow, 1923.

Kazhinskiy, B.B. Biologicheskaya radiosvyaz (biological radio communications). Kiyev, 12d-vo, AN Ukr SSR, 1962.

Kotik, I.G. Direct transmission of thought. Moscow, 1912.

Leont'ev, A.N. Problems of mental development. Moscow: RSFSR Academy of Pedagogical Sciences, 1959, p.53-127, 138-140.

Mardershtein, I.G. Reflection of the physiological theory of the brain in literary writings. Tashkent: Medgiz, 1962.

Novomensky, A.S. (ed.) Materialy issledovaniya kozhno-opticheskoy chuvstuitelnosti (materials on research of the skin-optic sense). Chelyabinsk, U.S.S.R.: Pedagogical Institute, 1965.

Novomensky, A.S. (ed.) Voprosy kompleksnogo issledovaniya kozhno-opticheskoy chuvstuitelnosti (questions of complex research on the skin-optic sense). Sverdlovsk, U.S.S.R.: Pedagogical Institute, 1968.

Pressman, A.S. Electromagnetic fields and living nature. Moscow: Academy of Sciences U.S.S.R., Science Publishing, 1968.

Pressman, A.S. Questions of theoretical and applied biology. Alma-Ata: Science Publishing, Kazak SSR, 1967.

Rejdak, Zdenek (ed.) Telepathy, telegnosis, dowsing, psychokinesis, papers of Czech and foreign authors. Prague: Svoboda, 1970.

Rejdak, Zdenek (ed.) Telepatie a jasnovidnest (telepathy and clairvoyance). Prague: Svoboda, 1970.

Rejdak, Zdenek, & Drbal, Karel. Psychotronics. Prague, 1970.

Romanenko, A., & Sergeyev, G. Questions of the applied analysis of chance processes. Moscow: Soviet Radio Publishing, 1968.

Sergeyev, G., Pavlova, L., Romanenko, A. A statistical method of research of the human EEG. Leningrad: Academy of Science U.S.S.R., Science Publishing, 1968.

Slobodniak, A.P. Psychotherapy, suggestion and hypnosis. Kiev, Gosmedizdat, 1963. (Includes telepathy.)

Vasiliev, L.L. Tain stvennyye yavleniya chelovecheskoy psikhiki (mysterious phenomena of the human psyche). Moskva, Gos. izd-vo politicheskoy literatury, 1959. Translated New Hyde Park, N.Y.: University Book, 1965.

Vasiliev, L.L. Eksperimental'nyye issledovaniya myslennogo vnusheniya (experimental studies in mental suggestion). Moskva, izd-vo Leningradskogo universiteta, 1962. Translated as Experiments in mental suggestion, Hampshire, England: Gally Hill Press, 1963.

Vasiliev, L.L. Vnuscheniye na rasstoyanii (suggestion at a distance). Moskva, Gos izd-vo politicheskoy literatury, 1962.

For a comprehensive listing of Soviet publications dealing with parapsychology, see Naumov (1971).

APPENDIX 6

RAW DATA FROM GRAPH IN FIGURE NUMBER 2

Breakdown of entries in Naumov, E.K. and Vilenskaya, L.V., Soviet Bibliography on Parapsychology (Psychoenergetics) and Related Subjects, Moscow, 1971.*

Year	Frequency Count		
	Academic Publications	Popular Scientific Publications	Total
1971	18	8	26
1970	5	15	20
1969	2	40	42
1968	12	32	44
1967	6	31	37
1966	4	33	37
1965	4	14	18
1964	3	19	22
1963	2	10	12
1962	1	11	12
1961	1	3	4
1960	2	5	7
1959	0	2	2
1958	0	1	1
1957	0	1	1
1956	0	1	1
1955	0	0	0
1954	0	0	0
1953	0	0	0

* Entries taken from Part I of the Bibliography only.